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Measuring Work Engagement: Understanding the Drivers in a Software Company

Case Futurice

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Abstract

In this thesis, I examine work engagement as a phenomenon in a software business domain through a qualitative case study. In the case study, a profound overview on the relationship between the case company's working environment and drivers of work engagement is provided, and measuring possibilities for such phenomenon is discussed. Moreover, in this thesis more insights in to the research gaps in the antecedents of job resources in IT and in measuring work engagement by utilising defined drivers are being provided.

In this thesis, I focus on studying the digital service company Futurice's 16 employees' perceptions. A semi-structured theme interview pursues to understand how Futurice's employees perceive their working environment and perceive work engagement. A selected sample reflects Futurice's diverse working environment, and enables the examination of the phenomenon in this specific context.

The findings suggest that six antecedents drive work engagement in the IT-field: a team level sense of communality and engagement, performance feedback, skill variety, learning and development opportunities, job crafting and job control. The unique working environment affects the selected antecedents through an emphasized need for one's own control and development. In addition, in the study I revealed divergence in the employees' perceptions on their working environment, which indicates a need for a measuring method enabling insights in to individual and personal differences. Through a clear relation between the working environment and the defined drivers, in the study I demonstrated an importance of field specific work engagement in accordance with the current scientific consensus and previous studies.

Keywords Work Engagement, Measuring Work Engagement, Drivers of Work Engagement, Job Resources, Software Industry, IT

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1 Introduction

In our changing economy, the needs for new methods of employee well-being management have arisen. As a term, work engagement is becoming more and more recognised and its benefits have reached the ears of the business world. The phenomenon of work engagement allows for the possibility to manage employee well-being in the era of information society.

In this thesis, I concentrate on work engagement research in the environment of a software house. The aim of this thesis is to contribute to current research of work engagement management for use in a software house. The goal is to examine work engagement as a phenomenon in this specific context.

The introductory part of this thesis begins by addressing the background and motivation for the study. The second section discusses current software business as a domain and the work conducted specifically in a software house. The third part introduces the case company. In the last parts of the introduction research objectives, methods, structure and research scope are gone through briefly.

1.1 Background and Motivation

Richard Donkin (2010) describes the changes our business world is encountering in his book *The History of Work*. He claims that in our history of work, the upcoming (and on-going) changes will transform our meaning of work, as the agrarian and industrial revolutions did before (p.2). Humans are on the verge of a new era in our society.

The transformation from an industrial to an information society is changing our way of working. Donkin (2009) presents multiple changes caused by this transformation. These changes are modifying both the nature of work and the requirements for employees. When information society is defined from an occupational perspective, it is understood to mean the changes that information and communication technologies are enabling in the methods of working. Information is becoming a foundation for occupations as well as for education and experiences. (Webster, 2014).

This revolution of new working has already shaped the way we work. Donkin (2009) introduces four core changes in our working habits and the nature of work. In an information society, work will shift from the office to the home, from collectives to communities, from

processes to projects and from formal working hours to discretionary hours. The fundamental changes of work are about to happen.

Since information society is in constant transformation, the creation of new ideas and points of view has become more and more crucial for value creation in today's business world. When searching for new possibilities in the future, opportunities will come from innovation and intangible capital goods. (Ahonen, Hussi, Pirinen, 2010) This change will also call for more demands on labour.

The information and services field is known for being dynamic and fast-paced. Therefore, a proactive attitude and innovativeness are not only the keys to success, but soon they will be necessary assets for existence. In order to survive in the modern world of agile and global business, a company itself must be an agile and self-determined one. (Martela et al., 2015, p. 19)

Software houses are representative of companies working with cutting-edge technology in information society. Software houses have already experienced the transformation of work life. These companies operate under changed requirements for work. Enabling work engagement is vital due to the future of business in this new society and in the business domain.

In the future, the successful businesses will be the ones, who are able to harness the work forces' motivation towards profitable work. Excitement and well-being will be competitive assets. (Martela et al., 2015, p. 21) A successful company needs motivated labour in order to innovate and find solutions. When taking into account the nature of modern work, work engagement could be one obvious answer in harnessing employees' motivations towards work.

When work itself is experiencing a revolution, it is obvious that traditional methods for following employee satisfaction are no longer enough. In fact, the old methods might not be suitable for measuring anymore. Work satisfaction measuring techniques are created to measure specific conditions of work. As previously stated, the nature and requirements of work are about to change on a fundamental level, which will demand change in managing employees' motivation. The success of managing motivation and work engagement can make or break the business especially in organizations of the future.

Currently there is not enough research in to work engagement's antecedents, which drive work engagement in a software house's context. Furthermore, there are no suitable methods created for work engagement measurement in this business domain. This study aims to gain

these insights in order to fortify employee wellbeing management in the era of information society.

1.2 Software Business

During this decade, software production has been on an upturn. Especially, the demand for internet and mobile applications has grown fiercely. Moreover, this demand for them seems to continue increasing. The speed of growth is not slowing down. Software production is booming despite its nature as an expensive and time-consuming process. (Genuchten & Hatton, 2010)

Smartphone technology is the fastest developing computer technology of all in history (Papows, 2010). There is clear evidence of a software production boom in our everyday life. One significant piece of evidence is the tremendous past-phase of mobile media growth since the introduction of such technologies (Scarpino & Chicone, 2011).

In addition to technology, the demand for personal devices has also developed. Public demand for personal devices has increased enormously during the last decade. Self-evidently, the change in the demand of devices has an effect on software production as well. Together the fast development of new technologies and the growing demand for personal devices have caused massive increases in the software business. (Scarpino & Chicone, 2011)

In software business, technology is changing faster than in any other fields of business (Salovaara & Tuunainen, 2013). Therefore the abilities to learn and transform are vital for success. Change is constant, and in order to survive in the software production business, a company needs to keep up with change.

The software business is a knowledge-intensive business domain (Salovaara & Tuunainen, 2013). Companies rely on advanced technologies and professional knowledge. Usually, software production and digital service houses do not have their own standardised products to sell. In-house experts create services or products case-by-case. Such production relies on employee expertise.

Their nature as knowledge-intensive businesses and their on-going technological changes separate software production companies from traditional and stable businesses. Organizational structures as well as methods for work differ considerably in software production houses when compared to business organizations in more traditional fields.

Next, this thesis will discuss the basic elements of a software house and its unique characteristics in regards to the methods and organization of work. The aim will be to highlight the differences and specializations in working within this business domain.

1.3 Work at a Software Company

Before discussing their key characteristics, it should be noted that today's software houses do not exclusively concentrate on software production or development. Even though software production is still in the core of these companies, they also provide other digital services. For example, they offer digital consulting or design services. However, the nature of the work environment will have the same key characteristics, whether or not a company has expanded their service offerings beyond software production. Therefore, in this study, a distinction has not been made between companies, which are purely concentrated on software production, and companies, which are also providing other services beyond software development.

The nature of knowledge- and a labour-intensive business domain creates specific requirements for an organization. Software development is time sensitive and it is considered expensive. These fundamental factors create a base for an organization, which differs from a traditional one. All upcoming characteristics discussed can also appear in organizations, which operate in other fields of business. However, for a software house, they are usually a necessity for success or for assurance of survival itself.

Leadership in a software production house must be based on collaboration – not on command-control management. Success requires flexibility and the ability to change and create new designs, structures and plans. (Cockburn & Highsmith, 2001) In a software production house, competence to think out of the box is essential, which creates unique requirements for management. The organization must enable innovation and learning.

Especially with agile software development methods, people are more important than the project management itself. For example, a team's skills, communication and cooperation are key factors in a successful agile software development project. A necessity for control or management systems is not essential for success. (Cockburn & Highsmith, 2001)

In an organization of this kind, trust is a key component. An individual has to be capable of making decisions. Without trust and without harnessing the whole organization to create

value and to keep up with change, software production is unlikely to be successful. (Cockburn & Highsmith, 2001)

Work in a software house is project-oriented. Teams in projects vary due to project-orientation. Teams are re-created every time at the beginning of a project. After a project, an employee is assigned to another project with a different team. (Salovaara & Tuunainen, 2013)

Project-orientation in a software house can be especially visible in the work of a developer who is using agile programming. Agile programming is done in sprints, which are intensive rounds of software development. Agile programming supports iterative and incremental software development. Agile programming is considered to be hyper project-oriented.

Due to project-orientation, changes in work teams are constant. Teams are re-formed after every project or production. Networks are under constant and fast-paced change in project-based work. Two employees might never work together again after a project has completed (Salovaara & Tuunainen, 2013). Work in software production involves many interactions with new people and adaptation to new team dynamics.

Because of constant change, organizational groups might also form outside of project teams. Shared-work practitioners mean people, who are executing the same work in different teams or settings. (Markus, 2001) In a software organization, organizational groups can be formed by different causalities than in traditional organizations due to changing project teams and differing working conditions.

In addition to changes in project teams, changes in work premises are a characteristic of the software development environment. Additionally to the former, there are situations, in which project teams may not be in the same location. This may also lead to them representing different cultures. Software development is sometimes a multicultural work environment, in which personnel may work remotely part or even full time (Olson & Olson, 2003). Multiculturalism and remote work are modifiers in the work environment of a software house.

A multidisciplinary approach and an interdisciplinary team are usually a compulsory combination within software houses. Software development is a complex entity, which requires input from several professionals or teams. A successful production requires diversified skills. Therefore, a software production organization is usually highly diverse in skillsets.

Because creating a successful software project requires the cooperation of many people with different backgrounds, a mutual vision has to be shared with everyone involved within the project (Siau et al. 2010). Cooperation is a key factor in many organizations. However, in software production cooperation has a heightened importance. People with interdisciplinary backgrounds create the organization's products or services completely. Success requires high cooperation between highly skilled people.

Cooperation is vital, because successful software production requires an awareness regarding one's co-workers and artefacts. Developers especially, need to understand broad causal connections and system behaviour in order to develop successful and functional software. Possible bugs may be caused by anything within a system. Avoiding and remedying these bugs requires deep understanding of the process, knowledge sharing and cooperation. (Ko & Venolia, 2007).

In addition to cooperation, a collective responsibility is a key characteristic of a successful software house. Since there is no strict project management, responsibility must be shared within the organization. (Cockburn & Highsmith, 2001) The organization as a whole, must take responsibility over projects and operations. Everyone must be attentive to current situations as well as to the future.

Despite its importance, collective responsibility must not hamper a focus on the skills of individuals. Although it is a team, which often develops software, the team always consists of individual talents. A software production project will be adjusted to specific people on the grounds of talent and skills. (Cockburn & Highsmith, 2001) Therefore, individual development is crucial. An organization must enable on-going individual (and team level) learning. In a strict organization or a highly controlled environment, individuals' skills and talents often cannot appear or develop to their fullest potential. (Cockburn & Highsmith, 2001)

Even though a development project's success depends heavily on the skills of different individuals, a lack of user and management support can lead to project failure. The talent of a team member or an entire team cannot be utilised without support. Executive support and user involvement are vital in addition to a team's capabilities. (Cockburn & Highsmith, 2001) Even though high levels of management control may lead to project failure, withholding any support or contribution will make success more difficult.

Emphasis on the talents of individuals and teams and collective responsibility also creates demands for the organization culture and the management culture of a company. In a highly

bureaucratic and strict organisation, successful software development may not be possible. Talented and skilled people do not operate successfully in controlled environments. Rather than control, they need freedom and trust. (Cockburn & Highsmith, 2001)

1.4 Case Company

Futurice is a Finnish modern innovation consultancy company, which creates digital solutions for its customers. The company offers software production and design services, digital consulting and training. The company's core business is amongst online- and mobile software production. Futurice utilises agile software development methodologies and lean service creation in their business projects. Futurice's clients are from varying industries and the size of a client company varies. (futurice.com/services)

Futurice was established in 2000. Today the company has over 300 employees and the amount is growing constantly. Futurice's headquarters are located in Helsinki, and the company has offices in Tampere, Stockholm, London, Berlin and Munich. In 2012 and 2013, Futurice was selected as the best place to work in Finland as well as in Europe by the Great Place to Work Institute. (futurice.com)

Organizational culture is a strong driver at Futurice. It's organizational culture consists of three stated values which are Transparency and Trust, Freedom and Responsibility and Self-improvement and Social Impact. Futurice states on their webpages that "This is a company built on trust" and that "The passion and vision of our people drive this company". (futurice.com/culture/in-brief)

Transparency and trust are at the core of Futurice. At Futurice, people are trusted to act based on their own judgement. In order for them to be able to make decisions, they need information. Therefore, information is shared amongst employees. For example, employees have access to financial data. (futurice.com/culture/in-brief)

Freedom and responsibility are connected to each other in this environment. Employees are given a great degree of freedom. However, with this freedom comes a responsibility for one's own decisions. At Futurice, before making a decision, employees are encouraged to think of their own people, their customers and their business outcomes now and in the future. (futurice.com/culture/in-brief)

Futurice also believes in learning through self-improvement and social impact. An example of this is their Spice program, via which employees are compensated for their open source projects. Employees are encouraged to try out their ideas to see whether they are successful. ([futurice.com/culture/in-brief](https://www.futurice.com/culture/in-brief))

1.5 Research Objectives

In this thesis, the research objectives are amongst two areas of work engagement research. In current work engagement research, there are two research gaps, in to which this thesis aims to provide more insights. The objectives are set to examine aspects, which have not yet been studied comprehensively in this field.

Currently there is a lack of studies in to antecedents, which drive work engagement in a software company's environment. As stated before, a software organization and the ways of working it employs differ greatly from traditional organizations. Therefore, it is essential to find antecedents that predict work engagement in this unique environment. One aim of this thesis is to determine the factors in antecedents that drive work engagement in a software house.

At present, there is a lack of understanding of the methodologies of work engagement measurement in the software development field. Academic research on work engagement, and the measurement of it, is still a young field of study. It has not gotten going until the 21st century. (Hakanen, 2009) Already, some existing possibilities of work engagement measurement exist in both the academic as well as the business environment, but these cannot provide weekly-level or monthly-level views, or follow trends of work engagement within a narrower period. Additionally, these tools are not designed for the working environment, in which this thesis is interested.

Based on defined research gaps, four research questions were defined:

- i. *How do employees perceive a software company as a working environment?*
- ii. *In what circumstances do employees feel work engagement in a software company?*
- iii. *Which job resources' antecedents drive work engagement the best in a software company?*
- iv. *How should the case company measure work engagement in this specific context?*

These four research questions are targeted to provide insights in to two defined areas, which both are currently lacking in research. Especially, research on antecedents is vital for future purposes. The understanding of drivers and antecedents in this domain enables further research and management of work engagement. Even though these four questions are handled as separate concerns, in this thesis I am interested in the entity that these questions form. The ultimate goal is to increase the understanding of work engagement as a phenomenon within this context.

1.6 Research Methods

At present, there is a lack of research in to the field of work engagement in software companies as well as in the field of measuring work engagement in itself. The purpose of this study is to examine work engagement specifically in a software development company. Research methods are chosen to enable relevant observations as well as to maintain scientific accuracy. The chosen research methods for this study are literature review and a qualitative case study. These methods were chosen in order to receive more insights in to the phenomenon in question.

The first method to be utilised is a literature review. The second section of this thesis provides an overview of current work engagement measurement research. The overview acts as a base for the conducted study and provides understanding of the phenomenon in question. In the literature review, work engagement will be defined and handled in terms of drivers, measurement and its effects on business success.

A qualitative case study was chosen as a main research method due to the complexity of the topic and a lack of previous studies. In a case study, the actual environment and the studied phenomenon are being combined. Therefore, a case study is a great choice for this research, because of the unclear borderlines of the phenomenon and the environment.

The data collection was conducted by performing 17 semi-structured theme-interviews. Each interview was transcribed and analysed using a sample point of view. In a sample point of view, all the claims made by interviewees are considered as a part of existing reality. In this sort of study, it is irrelevant to examine, which claims are objective and which are not. The assumption is that the received data or material is real and honest.

A detailed reasoning and comprehensive explanation for chosen methods can be found in this thesis' third section "Research Methodology". The chosen methods for data gathering

as well as for analysis are argued. In addition, the study process is explained in detail in that section.

1.7 Research Scope

In this study, I concentrate on examining a certain phenomenon within one case company. The selected case company, Futurice, has been introduced earlier in this section. In this thesis, I utilise current existing theory to observe one company's environment. The research scope of this thesis is one case company.

In this study, work engagement is discussed as a phenomenon, which cannot be separated from an organization. In different environments, the most meaningful factors or components of job resources vary, and drivers of work engagement differentiate depending on the organization (Schaufeli, 2012). Therefore, work engagement cannot be separated from its environment. In this thesis, I deal with one occurrence of work engagement in a defined environment.

As will be introduced later in the literature review, there have been both negative and positive approaches within work engagement research. The positive approach has a strong academic background and its popularity is growing steadily. In this thesis, the emphasis is on advancing work engagement in the case company. Therefore, in this thesis I concentrate on the positive approach of work engagement research.

In this thesis, I have selected two main aspects of work engagement research. These aspects are the antecedents of job resources and the measurement of work engagement. Even though work engagement is handled as a comprehensive entity, these two aspects are in the core of this study. The main interest of this thesis is in the observation of these two aspects.

Due to the nature of the research topic and the field of research, a qualitative case study and interviews were chosen as research methods. This study is limited to the information gained by utilising the chosen methods. Due to the limitations of size of a master's thesis, only one main research method was chosen.

1.8 Research Structure

In this thesis, there are five sections in addition to the introduction. The next section is a literature review. The third section, research methods, explains the chosen methods for data gathering as well as for analysis, and reviews the study process in more detail.

The fourth part, findings, introduces the research results. Research results are handled in the given order of research questions. Each question is addressed independently. The fourth section explains, reasons and argues the research findings.

In this thesis, the fifth section is discussion. The literature review is compared to this thesis' findings. The section discusses the research findings in terms of current literature. The final part, conclusion, summarizes the research results and addresses this study's managerial and theoretical implications. In addition, the conclusion proposes suggestions for future research and presents the limitations of this study.

2 Literature Review

Work engagement has become popular among academic researchers as well as business professionals (Schaufeli, 2012). The term is becoming more and more recognised as its business benefits are becoming more widely understood. However, there are several different perceptions and definitions of the topic in question depending on the environment.

Next, I will discuss on literature on defining work engagement, its drivers, measuring it and on the effects of work engagement. In the upcoming section, all the utilised definitions and perceptions will be explained and defined.

2.1 Work Engagement

As long as there has been research on work well-being and occupational health the main approach has been through problems and negative events, which are occurring when health management is neglected. The negative effects of ignoring health management have been emphasized in research. The negative effects have also been the base for methods used in work engagement measuring. Stress symptoms, work exhaustion, sleeping problems, sickness leaves and work indisposition have been in the centre of research. Problem with this negatively oriented thinking is that by focusing only on problems we will probably only get problems. (Hakanen, 2009).

Research related to work engagement has made positive opportunities of work life and work well-being visible. In order to strengthen and develop positive matters related to work force, there has to be concepts, abstracts and measuring techniques supporting it. Work engagement as a term and a phenomenon is a perfect match when searching for a positive approach. Work engagement can be defined through positive opportunities and can be measured reliably. (Hakanen, 2009)

Even though work engagement is enabling a positive view and reliable measuring techniques, there are some researchers, who define the term and concept through problems resulted from failures in work engagement. There has also been two different ways to approach work engagement. However, as interest in positive (organizational) psychology is increasing, it is no wonder that positive approach to health and well-being is growing (Schaufeli and Bakker 2004, p.3).

Due to increasing popularity of positive approach and strong academic background in defining work engagement through possible positive effects or outcomes, in this thesis the main emphasis is on positive approach to work engagement. The ultimate target of this thesis is to support individual work engagement in case company and advance positive outcomes dealing with work engagement. Therefore, the choice of positive approach is a natural choice.

Next, in this thesis, I will provide insights in defining work engagement and choose a definition, which is being utilized in this paper. In addition, the difference between work engagement and work satisfaction will be clarified.

2.1.1 Definition of Work Engagement

The definition of work engagement seems to vary depending on the person using it and on the situation. During the last decade business professionals and researchers have seemed to modify the term in order for it to be suitable for their own purposes (ADP, 2012). Operationalizing and finding the nature of engagement in literature has consisted of numerous pieces of work with diversified background; some without any theoretical background (Hakanen, 2009).

Business consultants and HR-professionals seem to use the term as an umbrella term, which gathers up commonly known concepts in work well-being. The term is promoted to be no less than the most important feature of social capital and human resources. In this context, work engagement usually consists of, for example, work satisfaction, engagement to organization, self-guided working methods towards best possible outcome and shared responsibility. (Macey & Schneider, 2008; Wefald & Downey, 2009; Hakanen, 2009a)

One of the first recognized academic definitions is constructed by researcher W. A. Kahn (1990), who defined work engagement as “the harnessing of organizational members’ selves to their work roles” (p.694) (Attridge, 2009). In the definition by Kahn person’s selfhood and “work-me” are positively connected to each other enabling the use of all three components of a person; a physical, an emotional and a cognitive component (Hakanen, 2009). Many researches in the field of work engagement, for examples May DR, Gilson R L and Harten L M, have developed the definition of work engagement utilizing the base Kahn provided.

One of the prevalent definition in nowadays’ research is constructed by Schaufeli et al. (2002) (Attridge, 2009; Bakker & Demerouti, 2008; Hakanen, 2009; Schaufeli, 2012). The definition is as follows (UWES Manual, 2004, p.4):

'Engagement is a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior. Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption, is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work'

According to Schaufeli and Bakker (2004, p.4) work engagement is a long-lasting and positive state of mind, whose three components are vigor, dedication and absorption. Work engagement does not only mean specific moments, in which person works in a flow state of mind. It is rather more pervasive state in person's acting and being, which is not linked on special occurrences. Work engagement is a wide phenomenon, which can be observed regardless of time or location.

The first of three components, vigor, is about the volition to invest person's full capacity to work without stopping or panicking when possible barriers occur. It consists of person feeling exuberance, motivation to put an effort to one's work, persistence and the will to work through obstacles. The second component, dedication, makes a person feel proud of one's work, meaningfulness and excitement towards one's own work. The last of the components, absorption, is characterized to be a deep state of mind, in which a person is completely concentrated on the matter one is working with. A person feels satisfaction and pleasure for getting absorbed in the work. (Hakanen, 2009)

In practice, the definition by Schaufeli et al. (2002) means excitement and pride a person has towards one's work. Employee is feeling happy when leaving home to work and also does some extra in order to help make the organization and co-workers even if not asked (Hakanen, 2009).

Even though the definition of Schaufeli and Bakker (2004, p.4) describes work engagement as a state, in which employee works willingly the extra mile towards common goals, work engagement is not stressful or tiring to a person. Work engagement is a genuine positive state, which improves well-being of an employee (Hakanen, 2009; Martela et al. 2015,

f. e. p. 26). Work engagement does not make a person feel work as a burden. It rather increases person's resources and offers a meaning to everyday life.

Definition by Schaufeli and Bakker is also commonly acknowledged among Finnish research and debate (Hakanen, 2009). In this thesis, work engagement is defined as have Schaufeli and Bakker in their research. Main reasons for choosing this definition is the academic consensus in Finland in use of Schaufeli and Bakker's definition and Schaufeli and Bakker's aim to measure reliable work engagement. In this thesis, I pursue to provide a reliable weekly measurement method for the trend of work engagement. Therefore, the use of definition, whose creators have made transformational research in work engagement measuring, is justifiable.

2.1.2 Work Engagement and Work Satisfaction

Especially in consulting literature, these two terms, work engagement and work satisfaction, seems to be used as synonyms. The meaning as well as targets aimed vary a lot. Even though in non-academic environment these two terms might have a same meaning or purpose, these two terms should not be used as synonyms in academic environment.

In academic literature (and partially in business literature) a clear difference between work satisfaction and engagement have been pointed out. There is a huge disparity, how a person feels engagement and satisfaction. Successful work engagement makes a person feel energetic, motivated and active as well as eager to seek possibilities in order to secure the best possible outcome. Satisfied employee might not desire any change to current job and does not put so much effort to work as employee feeling engagement would. (Hakanen, 2016; ADP, 2012)

Compared to work engagement work satisfaction is a narrower term, which measures only employee's current satisfaction or happiness to the situation one is. Traditionally work satisfaction measures satisfaction towards works and conditions, such as salary, benefits and working environment (ADP, 2012). Work Engagement seeks an answer for employee's emotional commitment and situation, which includes also connection and passion towards work. Generally, work satisfaction is included in work engagement, because rarely is an employee, who is dissatisfied with basic elements, emotionally willing to give the extra for the work (ADP, 2012).

2.2 Drivers of Work Engagement

Since the work engagement research is still a relatively young field of study, there is no absolute certainty of the factors driving work engagement (Hakanen, 2009). Some of the factors have proven to an effect on work engagement, but the entity of all possible factors and their connections is still partly incoherent. Especially, industry specific antecedents have not been researched in detail.

Current findings suggest that there are two types of antecedents driving work engagement (Bakker & Demerouti, 2008; Schaufeli, 2012). These types are job resources and personal resources. Usually, work engagement is a combination of both resource types. However, job resources are often the most predictive factor for work engagement (Schaufeli, 2012). Especially, when the job has high demands (Schaufeli, 2012).

As said in the introduction, for a software company there is not yet available researches on antecedents. There is a need for more comprehensive research on antecedents, which drive work engagement in this specific environment.

Next, this thesis will introduce the basic elements of job resources and personal resources. Addition to introduction, an overlook of the research on antecedents will be formed. There is much research that studied the impact of some single factor on work engagement. For this thesis, the overlook of these studies are extremely vital in order to form as comprehensive base for this study as possible.

Due to a strong evidence of job resources relation to work engagement and managerial potential of these resources, this thesis has an emphasis on job resources. Research on personal resources is also addressed, but not in same extent as is research on job resources.

2.2.1 Job Resources

Job resources stands for work place's situation and circumstances, which provides for an employee resources (Hakanen & Roodt, 2010). Job resources are consisted of physical, social and organizational aspects of work (Bakker & Demerouti, 2008). As a term, job resources is a wide selection of factors, which have an influence on an employee at work.

Job resources can be categorised to different groups based on their scope. Job resources can be categorized to assignment level, work-organizing level, interaction level or organization

level resources (Hakanen, 2009). These classes are not strict and some job resource could be categorized in several levels. Mentioned levels are mentioned only to ease understanding.

Assignment level resources can be for example, results from specific assignment and a possibility to develop oneself further by executing a task. Assignment level resources are dealing with some single task or duty. Resources related to organizing can be independency at work. This level's resources consider how the work can be organized. (Hakanen, 2009)

Job resources dealing with interaction are for example, support of managers and colleagues. Interaction level resources address communicational aspects at work. Organization level's resources are general properties of an organization. Examples could be supportive and innovative working environment or positive atmosphere. (Hakanen, 2009)

Job resources has a broad effect on an employee. For example, positive job resources can reduce employee's negative feelings towards demands in the work. They are also supporting employee in achieving set work goals and in motivation (Hakanen, 2009; Bakker & Demerouti, 2008). Job resources also boosts employee's energy levels (Hakanen, 2009).

Ergo, job resources have many direct effects on an employee. Job resources effect a person through satisfying needs and motivating the employee. Job resources' positive influence is created via basic human needs and genuine motivation.

Job resources can satisfy basic human needs. Therefore, they can have a huge impact to a person. Some of these needs are for example, feel of autonomy, sense of communality and coping in life. These needs support employee's personal growth and learning at work. If an employee is being managed properly, the job resources can assist to fulfil fundamental needs of a person. (Bakker and Demerouti, 2008)

Job resources can motivate employees both internally and externally. In academic research, job resources are thought to have an intrinsic motivational role due to enabled personal development. The extrinsic motivational role results from job resources' nature as a tool, which helps to achieve goals at work. (Bakker and Demerouti, 2008) Job resources can be thought as factors, which increases internal and external motivation (Hakanen, 2009).

The strongest driver of work engagement is assumed to be job resources. Factors of job resources are predicting work engagement the most of antecedents. (Hakanen, 2009; Schaufeli, 2012) In research, job resources have gained a strong evidence of a positive effect to work engagement (Bakker and Demerouti, 2008).

For example, Schaufeli and Bakker (2004) proved in their study a positive link between three job resources and work engagement. These three job resources are performance feedback, social support and supervisory changes. In their study, they successfully argued that job resources are the predictor of engagement instead of job demands. Schaufeli and Bakker (2004) also showed that work engagement is a mediator between job resources and sales plans.

Job resources predict work engagement the most reliably when high job demands exist (Schaufeli, 2012). Cause relation between high job demands and job resources is explained with the conservation of resources (COR) theory (Hobfoll, 2001). This theory will be explained in next chapter of this thesis.

There are also evidence of job resource's effectiveness over time. A study by Schaufeli et al. (2009) found out that change in job resources predicted changes in work engagement on a one-year time span. A change in job resources could be seen as a change in work engagement after one year from job resource's modification.

According to Schaufeli (2012), the most important job resources are social support from colleagues and supervisors, performance feedback, skill variety, autonomy and learning and development opportunities. These five factors of job resources have proved to be generally the most vital ones. However, in different organizations and jobs, the most meaningful factor or component of job resources varies. (Schaufeli, 2012)

In the table below, found studies on job resources relation to work engagement is gathered up:

Table 1: Job Resources

JOB RESOURCES

<i>Factor</i>	<i>Relation to Work Engagement</i>	<i>References</i>
Social Support from colleagues and supervisors	Positive Effect; all three components	Schaufeli & Bakker (2004); Hakanen et al. (2006); Schaufeli et al. (2008); Bakker et al. (2006)
Team Level Sense of Communality and Engagement	Positive Effect	Bakker, Van Emmerik & Euwema (2006); Koivumäki (2008)
Performance Feedback	Positive Effect; all three components	Schaufeli & Bakker (2004); Schaufeli et al. (2008); Hakanen et al. (2008)
Skill Variety	Positive Effect	Hakanen & Perhoniemi (2006)
Autonomy	Positive Effect	Schaufeli et al. (2008); Lange et al. (2008)
Learning or Development Opportunities	Positive Effect	Schaufeli et al. (2008)
Supervisory Coaching	Positive Effect; all three components	Schaufeli & Bakker (2004)
Job Control (time and methods)	Positive Effect; all three components Positive Effect; Vigor and Dedication Positive effect on Dedication	Hakanen et al. (2006); Koyuncu et al. (2006); Mauno et al. (2007); Mazzetti et al. (2016) Llorens et al. (2006) Mauno et al. (2007)
Social Climate	Positive Effect	Hakanen et al. (2006)
Information	Positive Effect	Hakanen et al. (2006)
Value Fit	Positive Effect; all three components	Koyuncu et al. (2006)
Rewards and Recognition	Positive Effect; all three components	Koyuncu et al. (2006); Hakanen & Perhoniemi (2006); Lange et al. (2008)
Perceived Contract Fulfilment	Positive Effect	Parzefall & Hakanen (2008)
Job Crafting	Predicts Work Engagement	Harju et al. (2016); Petrou et al. (2016)
Transformational Leadership	Positive Effect	Vincent-Höper et al. (2012); Tim et al. (2011); Zhu et al. (2009)

2.2.1.1 Salience of Job Resources

Conservation of resources (COR) theory by Hobfoll (2001) suggests that people desire to maintain and protect the issues they value the most. The things people are keen on to obtain are for example material, social, personal or energetic resources. The study in question argues that one reason for an individual's stress experiences is a potential or actual loss of resources. (Bakker and Demerouti, 2008)

Hobfoll (2002) proposes that when obtaining resources and when being aware of the possible resource loss the gaining of new resources is demanding for salience. When job requirements are high (for example, workload, emotional demands and mental demands) the needed job resources become more salient and in that way they achieve their potential in motivation creation (Bakker and Demerouti, 2008).

The hypothesis has been tested for example by Hakanen et al. (2005) and Bakker et. al (2007). The findings were that job resources are the beneficial in creation of work engagement when job requirements are high.

2.2.2 Personal Resources

In addition, personal resources' relation to work engagement has been proven in academic research. Personal resources are known also as psychological capital. Personal resources are a person's capacities. Examples of personal resources are optimism, believe in capability, organizational-based self-esteem, extroverting nature and positive perfectionism.

For example, the finding by Hakanen and Lindbohm (2008), Langelaan, Bakker, Van Doornen and Schaufeli (2006) and Xanthopoulou, Bakker, Demerouti and Schaufeli (2007) argues that personal resources have a positive relation to work engagement. The studies have been crosscut studies (Hakanen, 2009). Longitudinal studies are unfinished.

In addition, two Finnish longitudinal studies have advocated a positive connection between personal resources and work engagement. Salmela-Aro and Nurmi (2007) discovered that self-respect during the study years is correlated to work engagement even ten years after studying. Also Mauno et. al (2007) demonstrated that organizational-based self-esteem had a positive effect on work engagement.

Under, in the table is collected important studies on relation between personal resources and work engagement:

Table 2: Personal Resources

PERSONAL RESOURCES

<i>Factor</i>	<i>Relation to Work Engagement</i>	<i>References</i>
Optimism and feeling positive feelings	Predicts Work Engagement Positive Effect; all three components	Xanthopoulou et al. (2007); Bakker et al. (2006); Luthans et al. (2008) Ouwenneel et al. (2012)
Self-efficacy	Predicts Work Engagement	Xanthopoulou et al. (2007); Bakker et al. (2006); Luthans et al. (2008); Consiglio et al. (2016)
Resilience	Predicts Work Engagement	Bakker et al. (2006); Luthans et al. (2008)
Organization based self-esteem	Positive Effect; all three components Predicts Work Engagement	Mauno et al. (2007) Xanthopoulou et al. (2007)
An active coping style	Predicts Work Engagement and Commitment	Luthans et al. (2008)
Hope	Predicts Work Engagement and Commitment Positive Effect; all three components	Luthans et al. (2008) Ouwenneel et al. (2012)
Positive Affectivity	Positively related to Work Engagement	Mazzetti et al. (2016)

2.3 Measuring Work Engagement

Work engagement is becoming more and more known as a term and its benefits have reached the ears of business world. Therefore, a varying collection of measurement tools for work engagement seems to have been created by academic researchers as well as business consultants in the 21st century. Work engagement promises employees' full commitment to work and self-guided organization, which could help to achieve long-lasting business success in a modern, fast-paced and changing business world. Therefore, it is not a surprise that several notable business consultant firms have been trying to create tool of their own at the same time as academic researchers have been pursuing towards reliable measuring tools.

Academic research in the field of work engagement, and especially measuring it, has not really got started until 21st century (Hakanen, 2009). Due to young nature of the research, the most of the studies are based on crosscut materials (Hakanen, 2009). However, there are

already a few longitudinal studies, which have been published (Hakanen, 2009). Moreover, research in the field in question is increasing all the time.

Based on literature, there are only a few reliable measuring techniques or tools for work engagement measurement. A short history of the research field can explain the lack of consensus and options for measuring work engagement in academic research. The Utrecht Work Engagement Scale and the 12-item Worker Engagement Index measurement tools seem to be two of the tools that have gained academic respect and are used as reference in articles and research papers.

Amongst academic researchers, a popular tool is being created in the Netherlands by researchers Schaufeli and Bakker. The Utrecht Work Engagement Scale (UWES) is a tool for measuring work engagement in research. The tool consists of two different versions, the original version and a shorter version, which have both gained academic respect. This thesis will present the UWES tool later in detail. In addition to the use of UWES in academic research as is, the tool has also been used as a base for modifying tools to be more suitable for specific situations. For example, the Finnish Institutes of Occupational Health's Work Conditions and Health-research has used a part of UWES as a sub-part in their inquiry every third year (Hakanen, 2009).

BlessingWhite, Gallup, Hewitt, Sirota, Towers Perrin, Valtera and Watson Wyatt Worldwide are examples of consulting organizations, which have generated tools of their own (Attridge, 2009). Success of the tools and academic research background (or lack of it) differ a lot case by case. In this group the most successful and acknowledged tool is created by Gallup (Harter, Schmidt & Keys, 2003; Harter & Schmidt, 2008). Their study has been taking place during last 30 years and resulted in 12-item Worker Engagement Index (Q12) and popular literature (Attridge, 2009; Wagner & Harter, 2006). A 12-item Worker Engagement Index is also presented later in detail in addition to the Utrecht Work Engagement Scale.

Addition to the UWES and Q12 there are two assessment instruments worth a mention. Oldenburg burnout inventory (OLBI) by Demerouti and Bakker (2008) is developed to measure burnout, but can be used to assess work engagement as it includes both positive and negative sentences. May et al. (2004) created a three-dimensional concept of engagement, which reminds a lot of UWES due to its structure around vigor, dedication and absorption. (Bakker & Demerouti, 2008)

In this thesis, OLBI as well as May et al.'s (2004) concepts will be left outside of a review. As argued earlier when defining work engagement this thesis has taken a positive approach to the issue in matter. OLBI includes also negative questions and approach, which makes it unsuitable for us for this purpose. May et al. (2004) concept is highly similar to the UWES, but some psychometric qualities are not ready available (Bakker & Demerouti, 2008). UWES is more validated than May et al.'s (2004) concept.

In addition to mentioned assessment instruments, there have been some recognized academic studies on day-level work engagement measuring. Sonnentag (2003) studied day-level work engagement and day-level proactive behavior relation day-level recovery. Sonnentag (2003) found correlation of 0,66 between day-level work engagement and general work engagement. The study also revealed that day-level recovery is positively related to day-level work engagement due to positive effect on the experience of all three elements: vigor, dedication and absorption.

As is in UWES and Q12, in the research conducted on work engagement the emphasis is on individual's work engagement regardless of background of a researcher. The most of the tools have been created in order to measure work engagement at the level of an individual worker. Even though most of the tools measure an individual's feeling, these individual-level measures can be typically universalized to reflect engagement in organizational or work group level. (Attridge, 2009)

Mentioned work engagement measuring tools are providing mainly methods in order to examine work engagement in academic research or education purposes. Especially UWES is meant primarily to be used in research (Hakanen, 2009). The tools provided are meant to examine work engagement's situation and provide wide understanding.

Even though Q12 is a commercial product designed to be used by managers in business, and UWES can be used in addition to, for example, annual employee satisfaction surveys, there is a lack in measuring work engagement. As said before measuring methods are mainly designed to conduct a study and investigate the present situation. Both of these tools give great insight into an organization's work engagement also in business environment when used correctly, but cannot provide weekly-level or monthly-level views, or follow trend of work engagement with narrower period.

Even though these tools cannot provide us straight answer regarding opportunities in week-level or monthly-level measuring, their pioneering and ground-breaking nature provides

this thesis the base, which can be used to examine possibilities in week-level measuring. Next, I will go through both mentioned tools and the background in the research regarding the tool in question.

2.3.1 Utrecht Work Engagement Scale

The Utrecht Work Engagement Scale (UWES) is a tool, which measures all three components of work engagement, which are included in Schaufeli et al. (2002) definition (Bakker & Demerouti, 2008). Ergo, the base of this tool is the definition created by Schaufeli et al. (2002), which was presented earlier in this thesis. It measures individual level's three components: behavioural, emotional and cognitive dimensions. The engagement themes, vigor, dedication and absorption, are correlating to these components and can be measured utilizing the UWES (Schaufeli & Bakker, 2004; Attridge, 2009).

As mentioned before, the UWES has received academically respect and is widely used internationally (Attridge, 2009; Hakanen, 2009). The amount of validations around the world speaks for its academic reliability. The UWES has been verified in multiple countries including China (Yi-Wen and Yi-Qun, 2005), Finland (Hakanen, 2002), Greece (Xanthopoulou et al., 2005.), South Africa (Storm and Rothmann, 2003), Spain (Schaufeli et al., 2002), and The Netherlands (Schaufeli and Bakker, 2003; Schaufeli et al., 2002) (Bakker & Demerouti, 2008).

2.3.1.1 The UWES-inquiry

Two versions of the UWES inquiry have been created. The original inquiry consists of 17 questions – six of vigor, five of dedication and six of absorption (Schaufeli & Bakker, 2004). Shorter version includes nine questions – three from each component. Claims used in shorter version are all part of the original inquiry. In most studies, there have been utilized original 17-question version, but the use of shorter nine questions version is getting more popular all the time (Hakanen, 2009).

Researchers have found that especially the vigor component can explain if an employee puts effort at work (Robinson, Perryman & Hayday, 2004; Towers Perrin, 2008; Attridge, 2009). However, Schaufeli and Bakker (2003) have argued that the most useful score for work engagement could be the total score received from the UWES due to correlations between

components (Bakker & Demerouti, 2008). In the year 2002 Schaufeli et al. pointed out the moderately strong relation of the three engagement components (Bakker & Demerouti, 2008).

The UWES inquiry has been compiled below. All of the claims are included in original version and the claims marked with star (*) are part of shorter inquiry. Components are presented in internationally agreed order (Hakanen, 2009). The scale of answers is from zero to six for each claim individually.

VIGOR

1. *At my work, I feel bursting with energy **
2. *At my job, I feel strong and vigorous **
3. *When I get up in the morning, I feel like going to work **
4. *I can continue working for very long periods at a time*
5. *At my job, I am very resilient, mentally*
6. *At my work I always persevere, even when things do not go well*

DEDICATION

1. *I find the work that I do full of meaning and purpose*
2. *I am enthusiastic about my job **
3. *My job inspires me **
4. *I am proud on the work that I do **
5. *To me, my job is challenging*

ABSORPTION

1. *Time flies when I'm working*
2. *When I am working, I forget everything else around me*
3. *I feel happy when I am working intensely **
4. *I am immersed in my work **
5. *I get carried away when I'm working **
6. *It is difficult to detach myself from my job*

There are available reference values for each section, as well as for total scores in academic research. In Finland the Finnish Institutes of Occupational Health has conducted studies including over 16 000 workers' answers in order to construct reliable reference values

for UWES 9 and over 8 000 answers for UWES 17 (Hakanen, 2009). The reference values are available for analysis for free.

2.3.2 12-item Worker Engagement Index

Gallup's 12-item Worker Engagement Index (Q12) has its base on 30-years of qualitative and quantitative research. It has been validated via psychometric studies and has practical evidence on its benefits for managers and organizations. For managers, the main advantage is achieved when using Q12 in creating transformation in working environment. (Harter, Schmidt, Killham & Asplund, 2006)

Q12 has a strong aim to maximize productivity in an organization. The concept of maximizing productivity through talent maximization has created the base for Q12 (Harter, Schmidt, Killham & Asplund, 2006). Per-person productivity is considered to achieve its maximum potential by increasing talent of a person through relationship, right expectations and recognition or reward:

$$\text{Per-person productivity} = \text{Talent} \times (\text{Relationship} + \text{Right Expectation} + \text{Recognition/Reward})$$

The study methods of Q12 have been centered around successful and productive work groups and individuals. Gallup has focused on investigating the most notable or successful employee perceptions of management practices. They have studied success and productivity rather than failure and reason for it. (Attridge, 2009)

2.3.2.1 Q12-inquiry

Gallup has combined two types of questions in Q12 inquiry: 1) claims measuring attitudinal outcomes (satisfaction, loyalty, pride, customer service intent, and intent to stay with the company) and 2) claims measuring actionable issues which act as a base for mentioned factors. These 12 claims are measuring the level of employees' engagement in their work. (Harter, Schmidt, Killham & Asplund, 2006)

The Q12 statements are as follows (Harter, Schmidt, Killham & Asplund, 2006; Copyright © 1993-1998 Gallup, Inc.). Each question has six response options from five to one and do not know/does not apply.

Q00. (Overall Satisfaction) On a five-point scale, where “5” is extremely satisfied and “1” is extremely dissatisfied, how satisfied are you with (your company) as a place to work?

Q01. I know what is expected of me at work.

Q02. I have the materials and equipment I need to do my work right.

Q03. At work, I have the opportunity to do what I do best every day.

Q04. In the last seven days, I have received recognition or praise for doing good work.

Q05. My supervisor, or someone at work, seems to care about me as a person.

Q06. There is someone at work who encourages my development.

Q07. At work, my opinions seem to count.

Q08. The mission or purpose of my company makes me feel my job is important.

Q09. My associates or fellow employees are committed to doing quality work.

Q10. I have a best friend at work.

Q11. In the last six months, someone at work has talked to me about my progress.

Q12. This last year, I have had opportunities at work to learn and grow.

Gallup is holding all copyright and access rights to all claims in Q12. A part of their service is to offer a software for results and for analysing the numbers. They also provide reference values when buying their service.

2.3.3 Differences Between UWES and Q12

UEWS and Q12 are two measuring tools, which both aim to measure work engagement in an organization. Even though the purposes of these tools are basically the same, they measure different things. They both measure work engagement, but the tools measure different aspects of it. The difference is caused by the different purposes of these tools: academic research and business use.

The UWES is an academic tool, which measure the state of work engagement. The observation is executed by examining the three components of work engagement. Vigor, dedication and absorption have their own set of questions in the query. The UWES is interested in examining correlations and situation of work engagement.

Q12 is developed for business purpose. The questions in Q12 are formed based on job and personal resources. Addition to the state of work engagement in an organization, the results of Q12 provide more information of the reasons causing the specific state. The UWES is more comprehensive in analysing the state of work engagement, but it cannot provide the insights

on the causes of the state. Q12 has it more covered. Based on the results of Q12, it is easier for organization to act and manage.

In this thesis, the approach of Q12 suits better for the aim to gain insights on the possibilities in measuring work engagement at Futurice. Even though Q12 cannot be utilised as it is, the approach of it can be. This thesis will study the most vital antecedents of job resources in this environment. The gained information might be utilised in forming a measuring method as have in Q12.

2.4 Work Engagement's Effect on Business Success

In two upcoming section, the importance of work engagement is being discussed from two different perspectives. The first part introduces the importance of work engagement in managing non-traditional organization in information society. The first section aim is to show the crucial nature of work engagement in the management of work force, if a company desires to survive in knowledge-centred business.

The second section presents the research as it is relevant to the relation of work engagement and business outcomes. This section addresses the proved effect of work engagement to business success and goes through four reasons, which causes improved productivity through work engagement.

2.4.1 Importance of Work Engagement for a Software House

Software companies present organizations, which cannot be managed with traditional methods. Requirements for success and characteristics of an organization and of a business domain vary a lot from traditional company. Key factors in the software production business domain are introduced earlier in this thesis.

New characteristics of work life requires a change in our way of thinking about leadership and the work itself. When requirements of business success and work are transforming, it is obvious that we need to understand the new state in order to manage it successfully. It is also vital to understand the change in fundamental level in order to lead the people with best possible manners.

In traditional work life we operate under certain myths, which has an effect on our thinking regarding people's behaviour and motivation. We have biases especially on time and freedom in one's job. Business world is on the edge of a huge transformation, which requires abandonment of all these myths. (Pinkin, 2011; Ressler & Thompon, 2008) Software companies cannot successfully manage organization by trusting these biases.

One example of traditional bias is managers' tendency to combine given freedom in employee's work to avoidance of working. If a worker were given opportunities to avoid work, this worker would take advantage of it. The work is the most efficient when it is controlled by management and the rules are followed. The problem is that in knowledge-centred work executing work duties efficiently is no longer enough. The need for information-centred and labour-oriented work is increasing all the time. For software companies, innovative climate is a must for success. (Pinkin, 2011)

It is vital to understand software production work and modern society in order to gain the best possible business outcomes. In order to manage employees in knowledge-centred work, we must update our perception of motivation at work. The new perception should be defined through wide self-determination and meaningfulness. The work itself should be the motivation and important for a person. In knowledge-centred work the traditional methods do not work. (Pinkin, 2011)

When considering requirements of software production work, work engagement can be an answer for business success. When work requires huge efforts from employees, the competitive advantage can be achieved through motivated and engaged people. Regulations and sanctions will not work in software production company due to increasing need of innovative efforts created by employees at work. Labour must be self-motivated. Employees must be engaged to work.

2.4.2 Work Engagements Effect on Productivity and Organization's Performance

There are already several studies, which testifies to the positive correlation between employee engagement and business outcomes. Researchers have been studying employee's own perceptions of work engagement's effects to business outcomes, and many linkage studies, as well as case studies have been conducted. Literature seems to share a common opinion of work engagement's positive effects regardless of study methods used. (Attridge, 2009)

Work engagement has already been proven to have a positive impact on productivity and performance and therefore, it is an advantage for those, who know how to embrace it. Currently those companies have a head start. As discussed previously we are on the edge of a huge transformation and within few years the understanding of the concept might be compulsory in order to survive.

2.4.2.1 Research on a Relation Between Work Engagement and Performance

Probably the most persuasive ones of linkage studies are conducted by Gallup. Gallup has been able to create reliable evidence of the link between work engagement and company financial profits. The convincing essence of Gallup's study is originated by massive sample sizes and advanced methodologies. Gallup's study method has been a meta-analysis, in which dozens of Gallup's studies have been compared to data from business' units. Their key finding have been a reliable and positive relation between work engagement and beneficial business outcome. Gallup's researches proves that work engagement reduces employee turnover, improves customer satisfaction, employee productivity and company profit. (Attridge, 2009) Also according to Gallup disengaged employees cost U.S. companies between 250 and 350 billion a year (Rath & Conchie, 2009).

In addition, Watson Wyatt (2002, 2004 & 2005) have examined the link between work engagement and business outcomes. In Wyatt's (2002) study, stock performance over time was compared to company's utilization of engagement enhancing practices. The study included 51 companies in United States. Wyatt (2002) found out a positive correlation between human capital index and future financial performance. The investments and practices in human capital are forecasting financial performance two years later after the measurement. Wyatt's (2004 & 2005) two other studies replicated the original study. The primary results were verified in both of the studies. The second and the third study included also European companies in addition to companies from United States.

One of the pioneering companies in the work engagement research field, BlessingWhite, has presented multiple case studies in order to prove the link between employee engagement and business outcomes. They have also conducted a wide selection of studies related the work engagement's state in organizations, for example studies on the dynamics of work engagement around the world. For example, the company Best Buy reports that an increase by one tenth of a point on a scale from one to five results in an increase of 100 000 in sales in a year

(BlessingWhite, 2008). JC Penney has also reported work engagement's positive effect on sales: based on research, the employees scoring top quarterly in work engagement, generates ten percent more sales than bottom quartile. (Attridge, 2009)

2.4.2.2 Why Engaged Workers Perform Better?

According to Bakker and Demerouti (2008) there are at least four reason explaining the better performance of engaged workers compared to non-engaged workers. The four mentioned characteristics are experience of positive emotions, experience of better health, ability to mobilize resources and crossover of engagement. The effect of work engagement has a wide nature and therefore, it can improve multiple features regarding the performance. The four reasons presented are academically proven to improve performance.

A study by Schaufeli and Van Rhenen (2006) revealed that engaged employees commonly feel positive feelings. The experience of positive emotions can explain their better productivity. Effects of happiness and positive feelings have been researched and demonstrated by several respected researchers (Bakker & Demerouti, 2008).

Good health can have an impact on productivity by enabling better possibilities to perform duties at work (Bakker & Demerouti, 2008). Researches by Schaufeli et al. (2008) and Demerouti et al. (2001) have demonstrated a correlation between engagement and psychosomatic health complaints. Engaged employees are not feeling psychosomatic problems as much as non-engagement employees are. Also Hakanen et al. (2006) examined work engagement among Finnish teachers and found a positive correlation to self-rated health.

According to Bakker and Demerouti (2008) engaged employee's better productivity might be caused by their talent to manage their own resources. There is evidence of a relation between personal resources and engagement triggering upward spiral (Llorens et a. 2007; Xanthopoulou et al. 2007). Finnish researchers have also verified this relation. Research groups Salmela-Aro and Nurmi (2007) and Mauno et al. (2007) found positive link between individual resources and engagement.

The fourth presented reason for better productivity is a crossover of engagement. Performance and productivity are usually combinations of many individual employees. Therefore, it can be conceived that the crossover of engagement can improve outcome of a work team. (Bakker & Demerouti, 2008) Bakker, Van Emmerik and Euwena (2006) observed that a team-level engagement effected positively to individual engagement. In addition,

dissertation study by Koivumäki (2008) verified the relation of individual work engagement to the sense of community.

2.4.2.3 Overall Model of Work Engagement

Bakker and Demerouti (2007) have constructed a model in order to describe the prime factors and consequences of work engagement. The model is designed to understand the effectiveness of work engagement. The model combines work engagement related functions from job and personal resources to performance. Its aim is to reveal the connections on theoretical level.

The model summarizes and puts into context sections in this thesis's literature review. The left side of the model, job and personal resources, were presented the section 2.2 "Drivers of Work Engagement" in this literature review. Job resources and personal resources are the drivers of work engagement. Due to the positivity approach of this thesis, job demand was not presented in detail. In the section 2.1. "Definition of Work Engagement" work engagement was defined and the components, vigor, dedication and absorption, were presented. In the previous section, the business benefits and outcomes of work engagement were introduced.

Job Demand – Resources (JD-R) model by Bakker and Demerouti (2007) (Bakker & Demerouti 2008):

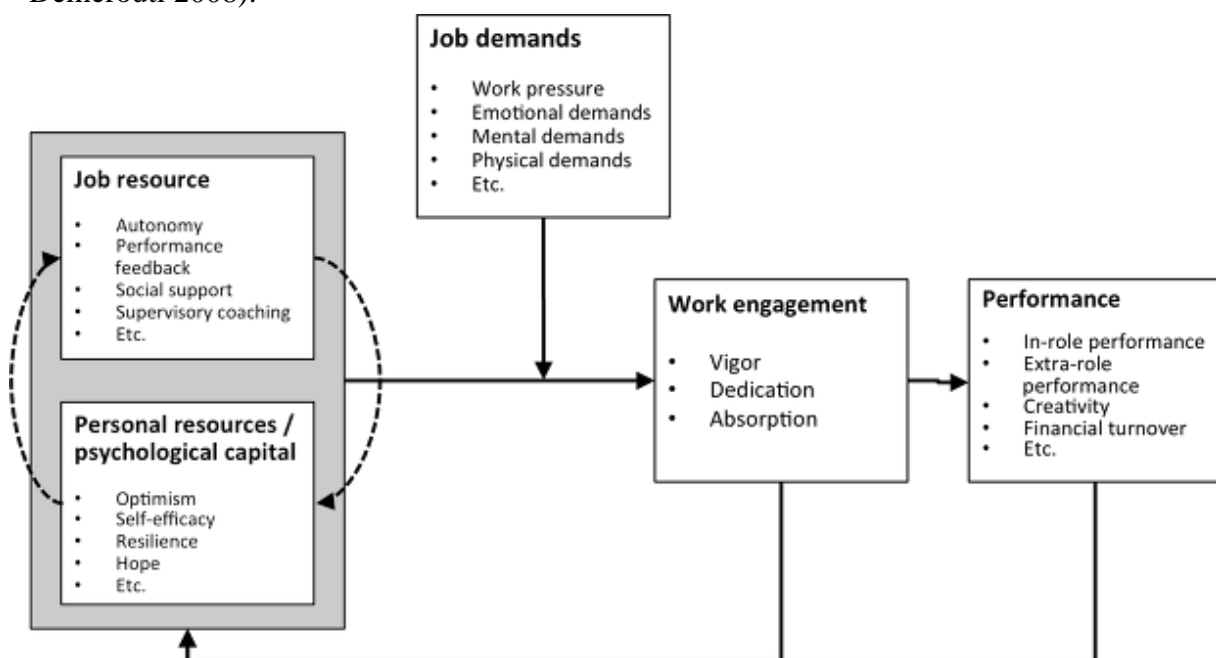


Figure 1: Job Demand - Resources (JD-R) model

3 Research Methodology

This section introduces the research methods, which are utilised in this study. The purpose of this part in this thesis is to justify the conducted study as well as explain choices made regarding the research methods. In this paper, this part act as a base for following findings phase.

In the first section, I discuss about the research design. In the research design part, I provide an explanation for chosen research methods and reasons the choices made. Two following parts, data collection and analysis, offer a detailed description of the study process. The last part of this section, evaluation, assess the trustworthiness of this study as a qualitative study.

3.1 Research Design

The aim of this thesis is to study work engagement in a software company. The purpose is to define the most important antecedents of job resources in this working environment and gain insights on how to measure work engagement. In this thesis, I concentrate on observing work engagement as a phenomenon in a software company.

Usually in social sciences and in business research, qualitative research methods are being chosen if study topic's prior understanding is narrow or if research in chosen field is not comprehensive (Eriksson & Kovalainen, 2008, pp. 5). A qualitative method is chosen when the goal of a study is to receive more insights on the phenomenon in question. In qualitative method, a researcher believes that an activity is happening inside the phenomenon and there is a need for in-depth insights regarding the topic. A qualitative method is a correct choice if the purpose of the study is a better understanding of a phenomenon. (Ellram, 1996)

In this study, the main purpose is to examine work engagement in a software production company as a phenomenon. Currently, there is a lack of research in the field of work engagement in software company as well as in the field of measuring work engagement. Therefore, a qualitative approach is justified in this thesis.

A case study is a common research strategy among several fields of research. For example, in social and organizational sciences as well as in economics a case study is a considerable utilised method. A case study offers profound insights on the studied phenomenon and enables to examine the complexity of a topic (Meredith, 1998).

A case study utilises comprehensive data occurring in a specific situation. In addition, a case study is combining the actual environment and the studied phenomenon. A case study is a great choice when the borderlines of the phenomenon and the environment are not clear. (Yin, 1994)

A case is also a right choice, if the phenomenon cannot be studied outside the context. A phenomenon cannot be examined outside the context, if the occurrence of the phenomenon varies depending on the context. As stated before, the importance of different antecedents as well as occurrence of work engagement varies depending on the organization and a situation (Schaufeli, 2012). Therefore, in this thesis a case study is a right research method.

In this thesis, I chose a single case study strategy due this study's purpose to gain more understanding in one specific phenomenon. In this study, my aim is to answer why- and how-questions of the phenomenon in question. The idea is to discover vital insights, which will be reflected to existing theory and to previous research conducted.

There are five typical research methods in case studies. These methods are documentation, archival records, interviews, observations or physical artefacts. (Yin, 1984) More specifically, in the study of a phenomenon, there are three typical methods: observation, recordings and interviews. If it is desired to provide more validity for the research, there should be used more than one techniques in the study. (Ellram, 1996)

In this study, interviews were chosen as a main research method in the qualitative case study. Due to complexity of this phenomenon and a lack of prior research, interviews offer a broad way to examine the phenomenon. Also, interviews enable interviewer to adapt on the situation by asking defining questions and making modifications if needed (Tuomi & Sarajärvi, 2002). In addition, a qualitative interviews enables also an uncontrolled method to examine the important topics for an interviewee (Alversson, 2003).

There are three typical structures in qualitative interviews. These common structures are structured, semi-structured and open-ended interviews (Fontana & Frey, 2000). In semi-structured or thematic interviews, pre-defined themes are being utilised. Also additional questions are being asked in order to secure the understanding of an interviewee's view of point as well as to explore the phenomenon from an interviewee's perspective.

Semi-structured interviews enable the examination of profound meanings of interviewees' discussion regarding the research topic (Hirsjärvi & Hurme, 2011, pp. 35). A key benefit of a semi-structured interview is that core and vital themes can be discussed

systematically (Eriksson & Kovalainen, 2008, pp. 82). A semi-structured interview enables the modification of the interview based in an interviewee, but also provides some structure for the interview at the same time.

In this thesis, a semi-structured method was chosen as a method for the interviews. A semi-structured method enabled to cover all the required themes as well as to modify interviews according to an interviewee. This method allows to examine the phenomena broadly without restrictions.

In this study, the research questions are anchored into theory. The research design has been planned based on current research in the field of work engagement. The provided literature review and the research gaps observed have defined the research questions as well as the study targets. The main research theory utilised is “Job Demand – Resources (JD-R)”-model by Bakker and Demerouti (2007).

In this study, there are four main research questions as have been stated before in this thesis. The research questions deal with separate components of work engagement. The components are software house’s working environment, when do employees feel work engagement in this environment, what are driving antecedents of job resources and how work engagement should be measured in a software house. Each component has a separate research question.

However, these four questions form an entity of work engagement’s situation at a software company. This study is interested in observing work engagement as a phenomenon. Therefore, it should be noted that these four questions will be also be discussed as one entity.

3.2 Data Collection

In this thesis, data collection was conducted by performing interviews inside the case company. The semi-structured research interviews were designed to reflect Futurice’s working environment and to provide answers for research questions. Next in this section, preparations for data collection as well as the actual research interviews will be explained and went through.

3.2.1 Preparations for Data Collection

Before conducting the interviews, there were two phases in the study process. The first was the selection of a sample group and the second was the planning in the semi-structured interviews. Both of these components were designed to support this thesis' aim to provide insights on work engagement at a software production company.

The sample group was selected to reflect Futurice's working community. When selecting the sample group positions, sites, working language and sex was taken into consideration. The emphasis on each sub segment was made based on ratios at Futurice. Below, a table presents the sample selection decisions.

Table 3: Sample Group: Competence, Site, Language, Sex

<i>SAMPLE</i>	<i>PERSONS</i>	<i>SITES</i>	<i>PERSONS</i>
<i>Developer</i>	<i>4</i>	<i>Helsinki</i>	<i>13</i>
<i>Tribe Chief</i>	<i>6</i>	<i>Tampere</i>	<i>4</i>
<i>Design Tribe Chief</i>	<i>1</i>	<i>LANGUAGE</i>	<i>PERSONS</i>
<i>Developer Tribe Chief</i>	<i>2</i>	<i>Finnish</i>	<i>14</i>
<i>Business Tribe Chief</i>	<i>2</i>	<i>English</i>	<i>3</i>
<i>Designer</i>	<i>3</i>	<i>SEX</i>	<i>PERSONS</i>
<i>Advisory</i>	<i>1</i>	<i>Female</i>	<i>6</i>
<i>Founder</i>	<i>1</i>	<i>Male</i>	<i>10</i>
<i>HR</i>	<i>1</i>		
<i>Other (Tech)</i>	<i>1</i>		

This thesis' structure was planned to provide un-influenced and intuitive information of interviewees' perceptions. The structure of the interviews was divided into four parts. The interviews were theme-based interviews, which consisted of four different themes. All themes discussed were highly related to each other. A structure for an interview is as an attachment is in thesis. As can be seen from the attachment, an interview began with a wider theme and then narrowed the topic of discussion when moving forward with in an interview.

Before starting an interview, interviewees were asked to introduced themselves, their job at Futurice and to describe a normal day at their work. The first theme to be discussed was the working environment in a software house in general. The second was the pros and cons of this working environment for an employee. The third theme consisted of employee's the most

motivating and engaging experiences during their career at a software house. In the third section, the interviewees were asked to freely describe the experiences they desired to share in the interview.

The forth theme or a section of research interviews concentrated on antecedents of job resources. The forth part of an interview different from the other previous three parts in the interview. The first three themes are completely based on what an interviewee desired to discuss and address. In the first three parts, there were no given guidelines or any suggestions for topics to be addressed.

But in the fourth part dealing with the antecedents, interviewees were given 15 pieces of paper. Each piece of paper consisted of the 15 antecedents of job resources defined in work engagement research. Interviewees freely chose as many antecedents as they wished. Interviewees were also asked to argue their choices.

The idea of this study structure was to ensure and provide information regarding interviewee's intuitive perceptions regarding this working environment and work engagement. In the first three parts, interviewees addressed only the factors when brought up themselves. Additional questions were only asked in order to receive more information on the topic they brought up or in order to understand the meaning of the topic discussed.

Event though in the last phase the pieces of paper were given for an interviewee, interviewees were not restricted in the interview. They were let to choose as many antecedents as they wished and also utilised to pieces of papers as they desired. The aim was to secure that interviewee not restricted on guidelines, which might have resulted in false research results.

3.2.2 Research Interviews

In this study, 17 interviews were conducted at Futurice. All of the interviews were semi-structured thematic interviews and included the pre-defined themes, which were presented in the previous phase. However, only 16 of the interviews were utilised in the formation of the final results. One of the interviews, the interview of a founding member, was decided to use to increase interviewer's knowledge regarding the environment in stead of the inclusion in final results. The interview of a founding member was not connected to the actual every day work at Futurice. Therefore, the decision of the exclusion was made.

In qualitative research, it is vital to solve the mystery of the phenomenon in question. Therefore, it is crucial to observe reasons for interviewee's perceptions and ask questions. (Alasuutari, 2011, s. 44) Therefore, in order to guarantee valid data for analysis, in the interviews interviewees were asked to describe an example of an event or occurrence, if they did not do it themselves without asking. Defining questions were also asked in order to understand interviewee's experiences. In all interviews, additional questions were asked in order to understand the answers and to find meanings behind the statements.

In the table above, there is assembled the durations of interviews and interviewees' personal information, which were received in the interviews. It should be noted that one interviewee was not willing to provide the information regarding one's age, length of career, amount of subordinated or career level. The compilation is formed based on 15 interviews.

Table 4: Compilation of Interviewees

	<i>Duration</i>	<i>Age</i>	<i>Years at Futurice</i>	<i>Amount of Subordinates</i>	<i>Career Level</i>
<i>Average</i>	0:58:30	34,9	3,7	3,7	4
<i>Min</i>	0:42:13	27	1	0	2,75
<i>Max</i>	1:19:59	49	7	14	5
<i>Median</i>	0:55:23	34	3,5	1	4,12

In order to ensure to privacy of interviewees only compilation of interviewees' personal information will be showed. This thesis' analysis utilises the letters given for interviewees. Each interviewee was given a random letter. For the confidentiality, it is vital that interviewees could not be recognizable at Futurice or outside the company.

3.3 Analysis

In this study, a sample point of view was chosen for analysis. In a sample point of view, all the claims made by interviewees are considered to be a part of existing reality. In a sample point of view, researcher does not editorialise if the claims are truthful or if they are objective. In this sort of study, it is irrelevant to examine, which claims are objective and which are not. The assumption is that the received data or material is real and honest. (Alasuutari, 2011, s.114)

When the data received from the interviews was analysed, the chosen standpoint was that all of the statements were honest. All the interviews in this thesis were thought as a part of existing truth. Every interview's value for the end result was the same than other interviews. Interviews or interviewees' perceptions were not evaluated in terms of honesty or superiority. All interviews were treated as equals.

Every organization can be categorised into several informal and formal groups. In qualitative research, interviewees are part of one or multiple organizational units. Interviewees describe the reality from the points of view these units create. (Alasuutari, 2011, s.49) The group memberships effect the statement made by an interviewee.

Also in this thesis' analysis, interviewees association in different formal groups are taken into account. At Futurice, there are several possible organizational groups, both informal and formal. The most important of formal groups are a site, a tribe and a competence group. The informal groups are formed for example due to shared topic of interest or a hobby. In this thesis, only the formal group were taking into account.

The differences between different persons and perceptions are important for qualitative research results (Alasuutari, 2011, s. 43). Usually, in qualitative research the aim is to form an organizational entity, in which these defined differences are being classified (Alasuutari, 2011, s. 44). In the formed organizational entity, defined causal connections are being presented. The core aim in qualitative research is form rules that apply in entire sample (Alasuutari, 2011, s. 52).

In this thesis' analysis, the aim was to define possible classification between observed formal groups and different perceptions. Only the formal group memberships were considered. The structure of informal group memberships is unclear at the moment at Futurice. In order to form an entity of all informal groups at Futurice, a separate study of all possible existing informal groups should have been conducted.

In a successful qualitative research, the study should look also beyond the observations. An observation is a clue, which leads to the final answer. (Alasuutari, 2011, s. 81) In order to figure the desired final answers, interviewees were asked defining questions in the interview situation and the given examples were utilised in the analysis. The presented examples revealed the actual meaning of a statement.

In this thesis, the chosen level of analysis was on covered issues by interviewees. The analysis was made based on what the interviewees discussed or answered to presented questions. The analysis concentrated on to assemble, what interviewees expressed verbally.

In the analysis, each interview was transcribed in order to enable the analysis. The forming of transcriptions was the first step in the processing of the interviews. Also before the actual analysis, each interviewee was renamed in order to guarantee the privacy of the interviewees. The 16 interviewees got own letter from “A” to “P”. The renaming was conducted in random order.

This thesis chose an inductive-oriented strategy instead of using predefined theoretical suggestions or sorting scheme. An inductive-oriented strategy is a method, in which researcher analyses the occurring themes and categories from a study data instead of ready-defined structures. (Eriksson & Kovalainen, 2008, pp. 129)

At first, each interview was analysed and reviewed in an individual level. After the individual analysis, this thesis utilised different tactics regarding different research questions. As explained in the structure of the interviews, this thesis’ interviews had four sections. The first three sections were highly un-organized and interviewees described freely their experiences. However, the fourth section was more constructed. Therefore, the forth section was analysed differently compared to other data received.

The first and the second phases of the interviews mainly answered to the first research question. However, it should be noted, that due to semi-structured nature of these interviews as well as un-restricted discussion, interviewees also covered topics relating to Futurice’s working environment in the other parts of the interview. The answers in the phase three, which was related to experience of motivating experiences, were analysed for the second research question.

Based on the individual reviews, shared topics or categories in all research interviews were formed regarding the first and the second research question. The analysis of possible categories and topics was made for each of these two research questions. 12 topics were observed regarding Futurice’s working environment and four categories regarding motivating experiences.

After the determination of the commonly appearing categories, each interview was analysed based on these categories. If an interviewee covered the topic in question, a perception and an experience of an interviewee was registered. Multiple excels-sheets regarding each

defined categories and possible causal connections were created. In addition, visual tools were utilised in order to form an entity of the perceptions and experiences.

The final section of the interviews was analysed differently compared to previous sections. In the last section, interviewees chose the most important antecedents of job resources for work engagement by selecting pieces of papers. When selecting the pieces of papers, interviewees were asked to explain the meaning of that specific concept. If the explanation was describing another antecedent in the study, the mark was given for that specific antecedent instead of their selection.

3.4 Evaluation

In order to address the strengths and weaknesses of a study as well as increase transparency and trustworthiness, a study should be evaluated throughout the process by utilising an evaluation model. The proper use of an evaluation model secures the quality of a study. Reliability, validity and generalizability is the most utilised general evaluation method in business research. (Eriksson & Kovalainen, 2008, s.292)

However, if the study is conducted with relativist ontology and subjectivist epistemology, there are options that are more suitable for the evaluation model. (Eriksson & Kovalainen, 2008, s.294). In this study, there is not defined one general truth and the research topic is subjective. The understanding of the reality depends on the interviewees and interviewer. Therefore, the general evaluation method is not a right choice for this study.

A more suitable corresponding method is Lincoln and Guba's (1985) framework, which is consisted of four aspects: credibility, transferability, dependability and conformability. Lincoln and Guba's (1985) framework suits better for this thesis due to its philosophical base. This method does not request for a critical realist of the social surroundings. (Eriksson & Kovalainen, 2008, s.294).

The first aspect, credibility, concerns about researcher's expertise in a topic and data sufficiency. In the evaluation, the trustworthiness of the data as well as researcher should be examined. (Eriksson & Kovalainen, 2008, s.294) In this study, the credibility is ensured with comprehensive literature review and open research process. The study and analysis processes have been described in detail and the logical process has been secured. This thesis has a strong

base in work engagement's academic research and the connections between literature and this thesis are presented.

The second part of Lincoln and Guba's (1985) framework, transferability, deals with the degree of similarity between previous researches and the study in question. A link between previous studies and on-going studies should be pointed out. (Eriksson & Kovalainen, 2008, s.294) In this thesis, I rely on JR-JD-model and research on the antecedents of job resources. Previous studies and their findings have been presented in the literature review. This study has been planned to be parallel to the previous studies. The greatest evidence of transferability is the similarity of this study's results and the results of the previous studies. The different environment evidently has an effect on the results, but the received research findings are parallel to the previous studies.

The third component, dependability, handles with the amount of shared information. A researcher should provide enough information of the process for the readers. The process should be well documented and traceable. (Eriksson & Kovalainen, 2008, s.294) In this thesis, the research process has been described in detail. In the methodology section as well as in the findings sections the process has been reviewed openly and thorough information has been offered. The study process is possible to replicate based on this paper.

The final aspect of the model, conformability, concerns with connection between findings and analysis. A researcher should present the data in a form, which is effortlessly understood by the readers. (Eriksson & Kovalainen, 2008, s.294) In this study, the data gathering method was interviews. In the findings section, the interview data is presented by utilising tables as well as quotes from the interviews. In each sub-section of the findings, the conducted analysis has been argued with quotes. Multiple quotes have been presented in order to ensure the conformability. In addition, the assembled tables ease the observations and understanding.

4 Findings

In the next section of this thesis, I introduce the main research findings. In this section, I explain the findings by using examples from the interviews as well as by utilizing an analysis of received interview data along with observations made of the software house's working environment.

Each research question will be introduced as a separate question. However, the four questions form an entity, of which this thesis is interested in. Therefore, these sections should be read as a coherent and connected entity. The previously addressed research questions will explain and act as background for the following research questions.

This research hopes to answer the following four research questions:

- i. *How do employees perceive a software company as a working environment?*
- ii. *In what circumstances do employees feel work engagement in a software company?*
- iii. *Which job resources' antecedents drive work engagement the best in a software company?*
- iv. *How should the case company measure work engagement in this specific context?*

Next, in this thesis, I discuss each research question separately. The previous methods section of this thesis acts as a base for this section. Research findings will be introduced in terms of chosen research methods. The research questions will be handled in the given order from the first to the fourth.

4.1 Workplace

The first addressed research question is concerned with a software house as a working environment. The aim is to define the key elements in this environment in terms of motivation and work engagement.

- i. *How do employees perceive a software company as a working environment?*

When interviewees were asked to describe software house as a working place in the theme interviews, 12 topics were brought up often by interviewees. These 12 topics are freedom and responsibility, trust, people at Futurice, informality, participation, transparency, learning, feedback, organization's direction, importance of a tribe, sense of communality and

social support. The first and the second section of the theme interviews handled the software house as a working place.

In addition to these 12 common topics, interviewees also discussed about other factors affecting their motivation and working environment. A few of the interviewees talked about salary, international opportunities, benefits at office (free drinks and food), open concept office, difficulties to adapt family life to offered free time activities, fear about organization's growth, positive vibe at the industry, stressful nature of consultancy work and about dynamic or even chaotic situation caused by a lack of hierarchy.

In addition, single individuals addressed some other topics during their interview. This study is concentrated on finding factors, which are common for multiple interviewees and are meaningful for a bigger crowd. Therefore, handling topics, which are mentioned only by a few people, would not support the purpose. All the topics mentioned in more than four interviews are included in the findings.

Table 5: Analysis on Work Place

TOPIC	INTERVIEWEE																SUM(+)	SUM(=)	SUM(n)	SUM
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
Freedom and responsibility	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0	0	16
Trust	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0	0	16
People at Futurice	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0	0	16
Informality		+	+	+	+	+	+	+		+		+	+	+	+	+	13	0	0	13
Participation	n	-	-	n		-		+	n		-	n	-	-	-	n	1	7	5	13
Transparency	n	-	-	n		-		+	n		-	n	-	-	-	n	1	7	5	13
Learning	n	n	-	+	n	+	n	+	n				+		n	-	4	2	6	12
Feedback	-	-	-	-		-	-		-	-	-	-	-	n	n	-	0	12	2	14
Organization's direction		-	-	-	-	-			+		-	-		n		-	1	8	1	10
Importance of a tribe	-	-	-		-		+	+	+	-	-	-	-	-		-	3	10	0	13
Sense of communality	n	-	n	-	+	+	n	-	n	+	n	-	-	n	+		4	5	6	15
Social support			-	+	+	n	+	+		+	+	-		+	+	+	9	2	1	12

+ = positive issue for work engagement at Futurice

- = negative issue for work engagement at Futurice

n = neutral attitude or the issue has both positive and negative side at Futurice

empty = an interviewee did not address this issue

The table above includes the 12 topics, which are discussed in more than four interviews. If an interviewee brought up the topic in question, a mark (+/-/n) was inserted. An empty slot

symbolises that an interviewee did not cover that specific topic. Perception of negativity or positivity, and a cause of it varies based on the topic. The negative symbol presents a decreasing effect on motivation and work well-being, while the positive symbol presents enhanced work engagement.

The analysis of the interview data consisted also an attempt to find causal connections. In a few of the factors, a causal connection was found with formal group at Futurice. For example, the perception of freedom was connected with working position. However, finding a causal connection was more an exception than a frequent event. No valid causal connection was found through the data. Due to selected research methods the data is varying a lot and formation of causal relation is challenging.

Next, I will explain the meaning of different signs regarding each topic. Also the observed differences in perceptions and in experiences will be introduced in every topic.

4.1.1 Freedom and Responsibility

The topic “Freedom and responsibility” was brought up in all conducted interviews. In fact, five times freedom was the first topic to be addressed by the interviewees in the interviews. In four interviews, freedom was the second topic addressed. Freedom and responsibility was a one out of two factors, which were introduced by all interviewees. Even though to the interviewees freedom and responsibility were clearly an obvious topic to be covered, based on analysis, some separations in understanding the topic is found.

All interviewees described freedom and responsibility as a positive factor in their working environment, but also its negative sides were acknowledged. Based on analysis, a “+”-sign in the table in all cases was chosen due to clear emphasis on positive effects and positive attitude towards the topic. If a negative side was brought up, interviewees emphasized the positivity for engagement and motivation regarding the topic.

Even though all interviewees mentioned freedom as a positive descriptive factor at a software house and at Futurice, the interesting finding is that the word in fact was defined in two different ways. After interviewees had mentioned freedom, if they had not given example of how freedom realises in their working environment, interviewees were asked to give an example of it. Based on examples given and intuitive answers, in this working environment the word freedom has two meanings:

- 1) Freedom means possibilities to modify your own career, follow your own interest and express your own interests (12/16)
- 2) Freedom means possibilities to choose your own working methods and time in a project (4/16)

All interviewees mentioned responsibility as a side effect to freedom regardless of how they understood freedom in this context. Generally, responsibility was caused by freedom given by the organization. Difference in perceptions was found also regarding the actual meaning of responsibility.

- 1) Responsibility for your own well-being, motivation and future
- 2) Responsibility to get the things done professionally

Differences in perception of responsibility was correlated to perception of freedom. As said, responsibility was introduced as a result of freedom. Therefore, these two topics are handled as one entity.

Freedom to affect high-level possibilities

For the interviewees, who understood freedom as a word, which is more related to self-expressing opportunities, an ability to control your own working methods as well as working time was also included in the word freedom. For this group of interviewees, freedom was distinctly a wider term compared to the interviewees, who only discussed about ability to choose your own working methods and time.

Freedom was described as a possibility to do almost anything you are keen on targeting:

“In our organization, it is possible to do things independently and it is possible to start to do your own things. Meaning like.. You can do almost anything that you want.. You have the possibility to impact on the development of your own career. // You just need to mirror your surroundings and to start to do things yourself.” (Interviewee A)

“You can build your own role, which you desire to have. “(Interviewee I)

“You are not restricted by your role. You can act based on your own judgement.” (Interviewee H)

“Your are able to make decisions yourself and manage your own things in this environment.. I guess in some extent, this (trust and responsibility) replaces the need of control.

// The organization is enabling that I really do have the power to make decisions regarding what I do and how I do it.” (Interviewee C)

Freedom to have a decision-making power over working methods and time

The rest of the interviewees understood freedom as a possibility to choose your own working methods and working time. When answering intuitively, these interviewees did not address the possibilities to have an effect on their career or on their future.

“A huge benefit here is that one can organise and schedule freely your own working.. It is really important for me.. You do not need to stress about somebody controlling you.” (Interviewee D)

“In my opinion, freedom describes this working place. // You choose your own working methods. // Responsibility comes along with freedom.. We do things here willingly.. But we do them wisely.” (Interviewee G)

4.1.2 Trust

The second out of two topics, which all interviewees discussed, was “trust”. Trust was seen as a factor, which is in the core of Futurice’s workplace. In a sense, trust as well as freedom and responsibility were utilised as defining factors this specific working place by interviewees.

Trust and freedom and responsibility were seen as highly correlated. Trust was seen to enable freedom and responsibility in this organization. Therefore, these two topics were typically discussed simultaneously or straight after each other. Based on research interviews, there would not be freedom and responsibility without trust.

When interviewees described trust, they used examples, which consisted of trusting people to be good persons, and also trusting people to act professionally. In this organization trust is given due to goodness of a person as well as due to their professionalism.

- 1) Trust given to a person
- 2) Trust given to a professional

“The organization trusts me so much, that I am expected to tell myself, if I cannot do something. I have the full faith of the organization. It is everybody’s responsibility to think if this is a good thing or if it is not.. There is no one specific person, who decided if this is a good

thing or not. Basically it is everybody's responsibility to figure out, if this is issue is worth of spending time and money. Extremely rarely, you must get an approval from someone else." (Interviewee E)

"Here, people do not stress at all about when other people work and how.. In this organization, there is no predictive controlling over people and their actions. There is no that sort of bureaucracy. // Here, trust activates people to function and work." (Interviewee K)

"This organization trusts that you make wise choices. We do not have any kind of micro management." (Interviewee M)

"You are trusted to follow systems of values." (Interviewee O)

Interviewees discussed either both of the perceptions or only one of the perceptions. There was not found any reason for separation between perceptions, which had been vital for this study.

4.1.3 People at Futurice

All interviewees discussed about their co-workers at Futurice. Even though all interviewees discussed about it in a positive way, the content was divided into two sub sections:

- 1) Recruiting has been successful (8/16)
- 2) Describing people at Futurice positively (mainly friendly, cooperative and talented) (14/16)

It is clear, that interviewees rely on their co-workers and other people inside this organization. They rely on the fact that other people are "good people".

"I have a perception, that our recruiting process is not light. Already during the recruiting process you earn the trust.. Everyone is recruited to be equal with everyone else at the organization. // We not have any kind of sociopaths.. Loads of people, but none of them is a dick." (Interviewee N)

"We have nice people here in our organization. In our culture, we really do care about people. We actually care about each other. // Everybody speaks to each other." (Interviewee F)

"We hire smart people, who are willing to learn new things. When you put "good people" together, they will learn unbelievable a lot from each other." (Interviewee E)

“Don’t know any people I would not like to see. Here every one is nice, friendly and open-minded.. .. We are people-oriented.” (Interviewee N)

“At Futurice, people intend to help others and make the world better place.” (Interviewee P)

4.1.4 Informality

In this specific context, informality as a topic has a special meaning to the organization. In this context, informality consists of informal relationships and informal communication. Informality comprises of aspects in communication, which are not related directly to one’s work or a project.

13 interviewees out of 16 discussed about informal events, informal relationship at work, informal power hierarchy or informal knowledge sharing. Regarding informality, all notes made in the study were positive. In this topic, positive perception was connected with this topic’s effect on motivation. Informality was seen to have a positive effect on motivation and work well-being at Futurice.

It should be noted, that there was not consensus on if Futurice is enabling enough informality as an organization. In four interviews, there rise a concern about if Futurice is putting enough efforts in order to secure informal relationships and the creation of informal communication in the future. Especially, the concern was dealing with increase of new employees and organization’s growth.

In addition, informality and informal aspect brought up a discussion of struggles to combine a family life to Futurice’s informal culture. Three interviewees discussed about theirs struggles in being part of Futurice’s informal groups at work. The feeling was caused for example by evening activities, in which they are not able to attend due to their children.

The reasons or examples for importance of informality at Futurice can be categorised into three categories:

- 1) Informal relationships bring people closer together and therefore, they improve project working
- 2) Learning and helping through informal relationships; informality enables knowledge sharing

- 3) Highly important for consultancy work due to emphasis on communication in internet-based tools

“Informality is in fact a defining factor for us. It makes possible for people to function and express oneself truly.. // If you are having fun while working, the work itself cannot go wrong.” (Interviewee E)

“I think that informal communication is really important for my motivation. People with families cannot always join activities, which I feel is a problem.. If you are missing out activities, you cannot make these relationships. Usually, in the organised parties you won’t get to know new people. In those events, people only talk with people they already know.” (Interviewee J)

“Informal relationships has an effect on trust in project working. It enables honesty towards others. // You are able to say straight to a person, if you don’t know how to do something. We all know that you should always say it straight, but it is a lot easier, when you actually know the other person. These things get easier, when the group is tight.” (Interviewee J)

“I feel better if we also talk about something else in addition to work issues. Result of informal relationship is some kind of trust and also it affects to discussion regarding work stuff. You feel that you can just go and talk any time. A barrier in talking decreases.” (Interviewee M)

“When you know more about a person, it eases talking at chats and in internet”. (This section in the interview was dealing with consulting nature of work at Futurice, and how sometimes communication is mainly through chats, Interviewee D)

4.1.5 Learning

Twelve interviewees discussed about learning. Four of them were positive statements, two negatives and six neutrals. Positive sign was inserted if now the organization supports learning enough in order to form a motivating working environment. Negative opinions dealt with lack of support in learning. Neutral discussions handled issues regarding how learning happens at Futurice. Both negative and positive discussions handled also, how learning happens in this organization.

In the interviews, there can be identified a connection between “informality” and “learning”. Informal relationships were enabling learning from each other inside the company. Nine interviewees felt that learning at Futurice mainly happens through talented co-workers and people learn from each other.

Learning as a topic consisted of three points of view:

- 1) In this environment people learn from each other (9/12)
- 2) People learn in the projects or by finding new challenges themselves (5/12)
- 3) Learning is based on own interest during own time (2/12)

“You will learn at a project, if you are able to get into that sort of project.. But if you do not have any knowledge, you cannot be sold into those kind of projects. There should be some one else in that project with you (means talented co-worker). // I do not know, if others do things during their leisure time. I would not use my free time for working. But I understand if people feel a pressure to learn during their leisure time. “

(Interviewee M)

“Learning here happens at work projects.. and also mainly during my own time.”
(Interviewee O)

“When you put “good people” together, they will learn unbelievable a lot from each other.” (Interviewee E)

“In this organization, everybody is willing to contribute in order others to learn.”
(Interviewee F)

“It is important to enable information sharing, because in this organization we mainly learn by asking the person, who is good at in that specific thing. We have full faith for this working community. These people, who work here, they actually know how to do their own thing. Therefore, you can just go and ask. And you are able to count on them. The answer will be a good one. “(Interviewee D)

4.1.6 Participation

As topics, “participation” and “transparency” were discussed closely with each other. In both topics now, one interviewee’s attitude was positive and eight considered it more as a negative

factor for work motivation. Five interviewees out of 14 thought that these factors had a positive as well as a negative side, or they just mentioned the topic as a neutral issue.

In “participation” and “transparency”, negativity is considered as a factor, which decreased motivation at Futurice. If the topic was harmful for work engagement at Futurice now, a “-” sign was inserted. Positive mark was dealing with the increased motivation caused by “participation” and “transparency”.

In a discussion of participation and transparency, sharing information was also brought into notice. Information sharing was seen to enable both of these topics. At Futurice, inside the organization a lot of information is being shared.

The explanations for increased or decreased work engagement caused by participation at Futurice can be categorised into two categories:

- 1) You can make a difference and affect things. It is motivating to be able to change things. (6/12)
- 2) Long discussion with a large amount of people frustrates and de-motivates. (8/12)

“I do not participate in discussion for example in FlowDock. There are always the same guys making comments. And.. Always when there is a discussion regarding a bit more idealistic issue, some people start strongly question about it.. It makes me feel really unpleasant. For me, these situations are really difficult to handle, because I do not know, how to react to them. Especially, because the intention was not to provoke negative feelings.” (Interviewee B)

“When it is able to participate, people get on board more easily. Also new ideas are received and people learn at the same time. The reverse side is that by enabling all to participate, things will take a while. We should learn about which decisions are being made by enabling participation and which are not. Big decisions of course should definitely be made by the whole company.” (Interviewee I)

“Well.. We have this really culture, in which people have a lot of conversations. And we should stick with that. The problem nowadays is that partners to discuss with are so many. Before you could listen people from every direction. At the moment, making decision is so crazy slow that there is no point. It is not possible to satisfy all. Always there will somebody, who is not happy with the decision.” (Interviewee L)

4.1.7 Transparency

As stated before, “participation” and “transparency” were connected to each other in the interviews. These two topics were introduced in the participation-section.

In the discussion of transparency, three perceptions could be defined:

- 1) Transparency has been increasing frustration to schedule overruns caused by involvement of all employees interested. Also, the decrease is caused by non-pleasant style to comment or give one’s opinion. (7/12)
- 2) Openness and sharing information are important and advanced way of doing things. (6/12)
- 3) There should be some sort of clear statement, which has to be transparent and which not. (7/12)

“Transparency well.. I think it comes true everywhere at the moment. And there is some critique. Meaning that the transparency here is a fake one. People say we are transparent, but we are actually not. In a company, everything is not democratic or transparent. We should not act too much that everything is when it is not.” (Interviewee M)

“Transparency and openness have started to disappear. Openness is operated in smaller groups of people. In those group people share things. When this group thinks they are ready or that now is a good moment, the issue is shared with the rest. People are not participated as early as they used to be. But in a way, I feel this is a good thing. Because there has been so much unnecessary limbo regarding internal decisions, which has caused frustration and schedule overruns.. “Lean” has disappeared from internal decisions due to massive amount of people participating in decisions making.” (Interviewee C)

“In this organization, there is a lot of information available. In my opinion, transparency describes well this organization. But I have noticed that people are in need of some sort of filters. People cannot control the amount of information and what is meaningful for you. I would not limit the amount of available information, but I think there is a need for filter.” (Interviewee L)

4.1.8 Feedback

Feedback as a topic was one the most negative topic regarding its situation at Futurice. 12 interviewees felt that a lack of feedback was decreasing their motivation at work. Therefore, their attitude in discussions regarding feedback was negative. In this topic, there were 12 negative discussions and two neutrals.

Two different types of perceptions were categorised in interviews:

- 1) At the moment, I do not receive enough straight feedback. I would like to get more feedback regarding my work. (12/14)
- 2) I do get feedback, if I asked it myself, or indirectly. (4/14)

“You get do get some feedback from the sales. It has to do a lot with work satisfaction. For me, it is one of the strongest motivating factors.” (Interviewee O)

“I do not receive any feedback. If nobody says anything or complain, I know I have done my job well. // Every body would like to get positive feedback. I am not saying I have not ever received it.. But in this organization everybody is not capable to think about giving feedback.” (Interviewee L)

“I have notice that if I do not get feedback, it has an effect on my mood. If you are not getting any feedback, you easily start to think that your work is not meaningful. Nobody sees my work.” (Interviewee D)

4.1.9 Organization's Direction

Discussion regarding organization direction varied. Three general topics were found in the interviews. There was one positive statement regarding current organization's direction to this working environment, one neutral and eight negative.

- 1) Strategy forming through personnel. Strategy is not top-down managed. (2/10)
- 2) Organization is not willing to change for something new. There is a need for change. (5/10)
- 3) There is a need for clear vision and some sort of “top-person”, who could be relied on. (6/10)

“I am wondering, how we are able to move forward. We should have courage to change things and make decisions. We are not agile inside the organization, even though we are selling agile solutions for customers.” (Interviewee L)

” I would like to have complete honesty in this organization. At the moment, we have an illusion of happiness. If somebody is working too hard or if something happens, it is not fixed as quickly as it should. Because it is not okay to talk about it, it is not fixed as quickly as it should. it is not Futurice’s culture and way of doing to be completely honest. I like the place, but I want to see this changing. It is not going to change from bottom up.. It will get lost in the noise.” (Interviewee P)

“At the moment, I am in need of a person, who would be there for me, challenging and seeing if anything makes sense. Someone should have a vision. It does not matter, if the vision is right or wrong. As long as there would be a vision. If there is not any vision, nothing will move forward. (Interviewee E).

4.1.10 Importance of a Tribe

Importance of a tribe or tribes in general was addressed in 13 interviews. Three of them have a positive approach. They felt that a tribe was a meaningful group of people for them and the tribe as a factor made the working environment more enjoyable. The rest of interviewees, ten people, did not see tribe’s meaning to them and felt it has no purpose.

- 1) Tribe is artificial and the members of tribe do not have enough shared factors. (10/13)
 - a. I wish for better tribe cohesion. It would improve our social environment. (Four out of ten interviewees, who experiences tribe as a negative issue, wished for improvements in tribe cohesion.)
- 2) Tribe cohesion is important for motivation and successful project work. (4/13)

“I feel the most cohesion to the “xxx” team, who has the same competence as I do. I am currently in a “xxx” tribe, and it is kinda funny that I do not feel sense of community towards it, even though they are my “competence’s tribe”. // In an ideal situation I would like to feel cohesion to a tribe. // I do not want to blame growth for lacking cohesion in tribes. I believe, the reason is that tribes do not have any headquarters. At the moment here is a culture of everyone having to clean the space they use, because nobody owns the place and so forth. // Flex-thinking has broken the tribe spirit.” (Interviewee C)

“Tribe does not mean a lot to me. It is a rather artificial division. // I do not work at my own tribe’s project. Tribes are created according to the accounts and the last few years all my biggest projects have in for the accounts for another tribe. // Staffing is planned despite of tribe.” (Interviewee M)

“In Helsinki, tribes do not have any own physical place. I would like to feel to change when you enter to the premises of another tribe. I would like to feel it, know it and taste it.” (Interviewee E)

“It is more important to feel cohesion to a project team, after all the most important is the team spirit of a whole organizations. A spirit in a project team is based on a spirit in an organization.” (Interviewee G)

4.1.11 Sense of Communality

Sense of communality was covered in 15 interviews. Even though almost every interviewee discussed about cohesion or sense of communality in this organization, subjects, content as well as way of expressing issues related to this topic varied a lot. Therefore, it is not possible to form valid overview of this topics.

Four interviewees brought up a current situation with sense of communality as positive factor for their work well-being. Six of interviewees found a room for improvements regarding sense of communality and six interviewees were neutral.

It should be noted, that interviewees felt sense of community towards different entities. Possible entities were the whole company, tribe, current project group, old project group, own competence group or some other group, which was formed based on shared interest. Interviewees also stated that they feel cohesion towards multiple different groups.

Regarding the difference in the group interviewees felt cohesion to, valid observations realised in whole sample could not be make based on this study. Only valid observation was that all tribe members of “Tammerforce”, who brought up this topic into discussion, addressed their cohesion to their tribe.

- 1) Growth can be a risk for us in the future: Will new people feel sense of communality?
Will I feel it in the future? (4/15)
- 2) We succeed as an organization or as a team – not as an individual. (14/15)

- 3) Competence-groups tend to silo themselves. (4/15)
- 4) Project-team is the group I feel cohesion to. (6/15)
- 5) I feel cohesion to my tribe. (6/15)
- 6) I wish for better sense of community to tribe or to Futurice as a company (to some bigger entity). (6/9= people not stating that they feel strong or some cohesion to their tribe)

“Everyone here is equal as a person. The sense of communality is stronger, because we all are equal. We all are being recruited in a way, which enables the equality. For example, our salaries and democracy are creating a base for equality. // In an ideal situation, I would desire to feel sense of communality to my tribe.” (Interviewee C)

“The bigger one can make the group, in which people feel sense of community, the better it is for the big picture. In this sort of business, the fact is that often project teams and clients change. It is a good thing, if you have someone to feel cohesion with. It makes thing a lot easier, if you know people already in advance a project.” (Interviewee E)

4.1.12 Social Support

Social support was discussed in three different perspectives. Two perspective were positive and they increased motivation and well-being in the organization. The last one was a negative, which decreased interviewee’s motivation. In total, 13 interviewees discussed regarding social support at some level. Nine of them were positive, two negative and one neutral.

- 1) You are supported when you need support. (6/12)
- 2) The organization is people-centred. (4/12)
- 3) We do not have “a big brother”, who is looking our benefits and looking after us. (3/12)

“We are really people-centred. In general, as a firm were really concentrated on people. // We think about people as people before thinking them as something else. After that we consider them as employees or resources. And in a way, there is two possible approaches to this issue. The question is, which one do you thinks about first? You will think about them both for sure. We are exceptionally people-centred, when you take this into account.” (Interviewee K)

“Social support affect so many things in this organization. It is easier to put yourself to another person’s shoes and see things from his perspective. You are able to be more flexible. If you have some good idea and you desire to pursue towards it, and if you have a right kind of support, you able to do anything.” (Interviewee D)

“I would like to have somebody to support me as a leader and watch over my actions. Not like restricting me or my work, but supporting me and being there for me. Somebody, who is super talented and super commendable. Socially skilled expert and a cool big brother. That person would look after my rights and share information for me regarding top-level decisions.” (Interviewee C)

4.2 Circumstances, in Which Employees Feel Work Engagement

The second research question of this thesis is concerned with the events, in which a software house’s employees feel work engagement:

- ii. *In what circumstances do employees feel work engagement in a software company?*

In the third section of interviews, interviewees were asked to describe a motivating moment, a project or an experience at Futurice. Interviewees explained from one to three experiences during their working career at Futurice. Interviewees chose themselves, what sort of motivating experience they desired to share in the interview.

All of the described experiences fell into four categories. These categories are feedback, collaboration and team work, final results and new challenges and developing something new. An interviewee could have described more than one motivating experience at Futurice, even though in the table under, there is only one mark. In four interviews, the motivating factor was in the end in the same category in all described moments. Therefore, amount of marks regarding one interviewee is not vital.

The meaning of this phase in the interview was to act as a base for the last part of the interviews, which is dealing about antecedents of job resources. The last part was structured. It should be noted, that this part emphasis was on motivating moments or motivating experiences. In the last part, the interviewees handled motivation more in general level in their everyday work.

This section of the interviews provides a background and more understanding of a person without him or her thinking what should be chosen. The last part was constructed by interviewer and did not let interviewees freely to choose any issues, which came into their mind. The results of this un-structured section do go in line with the last section's results, as we will see in the next section. Therefore, we can assume that also the structured part is reliable for this thesis' final results.

In addition, this part of the interviews acted as a base for the last structured part. By considering motivating moments, projects or experiences, interviewees oriented themselves for the last phase. The last phase dealt with motivation and work engagement in more specific level.

An interesting observation is that there was not identified valid separations between different competence groups regarding between these four factors. In this study, competence groups are developers, designers and other (including HR and business advisory). A choice was more determined by personal interests or something out this study's scope. A valid separating factor or classification was not found based on information available in this study.

In the table under, the described experiences are divided into four mentioned categories. There were no clear preferences for one or two specific categories. Interviewees' experiences categorised evenly in the four categories. In addition, the methods of this study does not support ordering the categories in order for their importance or frequency.

Table 6: Analysis on Experiences

CATEGORY	INTERVIEWEE																SUM
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
<i>Feedback</i>			x		x		x			x			x	x	x	x	8
<i>Collaboration and Team work</i>	x		x	x					x	x	x						6
<i>Result and Outcome</i>					x	x	x	x	x		x		x				7
<i>New challenges and development</i>	x	x		x	x	x			x			x			x		8
SUM	2	1	2	2	3	2	2	1	3	2	2	1	2	1	2	1	

Next, I will go through each category separately. Each category will be discussed in terms of the organization and importance of it for the work in a software house. The target is to receive understanding in work at a software house.

4.2.1 Feedback

Eight interviewees described their experiences, in which the motivation and the feeling of success was caused by feedback given by someone inside or outside the organization. Feedback was also discussed in the first section of 14 interviews.

In this organization, the importance on feedback is caused by:

- 1) When you receive feedback in real time, you do not waste time and you are efficient
- 2) Due to nature of this business, it feels like not many people are seeing your work. If you do not receive feedback, it feels nobody knows about your work.
- 3) Receiving feedback makes your work feel meaningful for somebody else

Especially in this organization, due to independency and self-determination, the feedback received is important for getting a confirmation that your work matters to someone else and you are not alone with a project. Your work is also recognised outside even though you work in constantly changing and in highly self-determining teams.

“When you receive feedback in real time, then you will not waste time. // Regarding meaningfulness of work.. It is about that other get excited. If somebody gets excited about your work, you will get a rush.” (Interviewee C)

“It is the most motivating to hear that I am helping. It makes me feel that I am actually making a difference.” (Interviewee P)

“For me, it is important to get appreciation. When we work in a project one or two weeks and when it starts to work, then we make a demo. People, who are interested in the project, get excited and say to me that I am doing good work.” (Interviewee M)

“Feedback is always important. I am always hoping or waiting for some feedback. During my the first year, I was worried if the organization even is able to see my work.. Do they see it at all? Nowadays I am kinda sure that they might see it.. Well.. I am not sure about it.” (Interviewee B)

4.2.2 Collaboration and Team Work

In six interviews, collaboration with a team and successful team work in general were the main causes of feeling motivation and positive hype regarding own work. The nature of Futurice's

work is consulting based project working, which causes the importance of a team. The work is challenging and highly socially dynamic.

In the given examples of the most motivating moments, there was observed two different factors related collaboration and team work:

- 1) Usually, work is performed together with a project team. Therefore, enjoyable team work has a huge impact on work satisfaction and motivation.
- 2) A team has a huge impact on final results and on enjoying oneself at work

“The thing was the way how we worked as a team. // I think we created together something better. Together we were able to make something better.” (Interviewee C)

“Our team got a few new people. Many things had been unclear.. After a while everything just started to work. Communication is working and so on. // Usually, the challenged and successes are not related to the technical success or related to my own work. They are more dealing with efficient collaboration and great team work.” (Interviewee D)

4.2.3 Final Results and Outcome

Eight interviewees described a motivating moment, which were caused by seeing the final result or the final outcome of one's own work. A common factor regarding these experiences was that the interviewee was proud of his or her own work and the outcome. They felt proud professionally and they were keen on sharing it. Motivation originated when the final results could be seen and they were pleased with it.

The motivation regarding final results and outcome were caused if the interviewee saw by oneself the result or if somebody outside Futurice or client company saw it:

- 1) People outside Futurice and client company see the actual results of my work
- 2) I see myself my own work in real world and people use it

“We decided to publish something together with a client in a big public event. We were able to make a cool thing visible to everyone. We could show outside that we succeeded in executing something cool.” (Interviewee I)

“It is highly motivating to see your own piece of art out there. And people actually used it. That is awesome.” (Interviewee E)

4.2.4 New Challenges and Developing Something New

In eight interviews, new challenges and development were the most motivating factors for interviewees. Interviewees described experiences, in which they were utilising new skills or learning something new. The experiences described varied in the fields of learning to use new tools and new methods as well as learning something from a new business domain.

Two sub-categories could be defined inside this category:

- 1) Learning something new and gaining new skills
- 2) Attraction of new things

Learning new things and attraction of new things could be separated in the experiences, which interviewees described. Learning new things was dealing more with gaining some new skills for oneself and receiving new attributes in work life. Attraction of new things dealt more with counter boredom at one's work.

“That project was so awesome. For me, it was something completely new. I did some interviews for users and actually encountered the people using the application. Totally new tools and methods. Also, our team had full decision power over working methods and occurring problem solving situations. We were completely in charge of the project.” (Interviewee A)

“If a project becomes too plain, easy or long.. you might get tired of it. I definitely would get tired. I appreciate new challenged and change. I definitely need it. I'd brings freshness to the work..// Yeah.. Every single project is different. I definitely have done a lot of different things.” (Interviewee O)

4.3 Antecedents

The third research question of this thesis tackles the antecedents of job resources that estimate work engagement in the best way in this specific working environment.

- iii. *Which job resources' antecedents drive work engagement the best in a software company?*

In the last phase of the interview, interviewees chose the most essential factors for them in order to be motivated at work and feel good at work. Interviewees were let to choose as

many factors from job resources antecedents as they wished. The average of chosen factors was 5,94 factors.

More of the methodology of the last section of interviews is explained previously in methodology section in this thesis. The last section of the interviews was the only constructed section. The other sections were semi-structured with a given theme to be discussed by interviewee.

The most chosen factors are a team level sense of communality and engagement, performance feedback, skill variety, learning and development opportunities, job crafting and job control (time and methods). Under, there is constructed a table including all interviews and choices interviewees made. Bolded cells are the most often chosen factors by interviewees.

Table 7: Analysis on Job Resources

JOB RESOURCES	INTERVIEWEE																SUM
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Social Support from colleagues and supervisors	x			x	x					x					x		5
Team Level Sense of Communality and Engagement	x		x	x	x	x	x	x	x	x	x		x				11
Performance Feedback	x	x	x	x		x				x				x	x	x	9
Skill Variety	x	x	x		x	x	x	x	x			x	x		x	x	12
Autonomy		x				x		x						x	x		5
Learning or Development Opportunities		x		x	x		x	x	x	x		x	x		x	x	11
Supervisory Coaching										x						x	2
Job Control (time and methods)	x			x	x		x	x			x	x	x	x	x		10
Social Climate						x	x							x		x	4
Information				x												x	2
Value Fit					x			x			x	x					4
Rewards and Recognition		x	x							x		x			x	x	6
Perceived Contract Fulfilment		x						x									2
Job Crafting	x	x	x	x	x	x	x		x		x			x			10
Transformational Leadership					x						x						2
SUM	6	7	5	7	8	6	6	7	4	6	5	5	4	5	7	7	

As presented in the previous part, the second part of the study worked as a base for this part. The categories defined in the previous section were feedback, collaboration and team work, final results and new challenges and developing something new. The choice of a team level sense of communality and engagement, performance feedback, skill variety and learning and development opportunities does go in line with defined categories in the previous section.

Two antecedents, job crafting and job control, did not come up in previous section's findings. As noted in the introduction of previous section, this part handles work engagement more in interviewees' every day work. Due to previous phases emphasis on motivating experiences at work, it is natural that job crafting and job control was not addressed by the interviewees.

Next, I will go through each the most chosen factor by interviewees. Each factor will be discussed in terms of interviewees' experiences and analysed based on findings in the first research question.

4.3.1 Team Level Sense of Communality and Engagement

Eleven interviewees out of 16, chose a team level sense of communality and engagement as one the factors driving their work engagement and work well-being in their current organization.

In this organization, the team level sense of communality and engagement is particularly important due to factors found in the first research question. For interviewees, it is important that people are committed to their job, people work as a team, there is a positive social environment in a project and you feel good being around with the people you work with.

In this organization, people learn from each other. Information and knowledge sharing as well as learning was seen as describing factor in this organization. In order to enable these procedures, informality and success of informal relationships was in the core of the solution. The team level sense of communality and engagement is enabling these.

In the previous section, the main reasons for importance of collaboration and team work were stated:

- 1) Usually, work is performed together with a project team. Therefore, enjoyable team work has a huge impact on work satisfaction and motivation.
- 2) A team has a huge impact on final results and on enjoying oneself at work

Work at Futurice is basically consulting work. Work is conducted in varying project teams and work is highly dynamic. Teams and people you work with change constantly. Team's success affects project success in consulting work.

Teams change and people you work with change. Therefore, also wider sense of communality was seen important. However, the team level cohesion and engagement was the most engaging factor.

Interviewees experienced people at Futurice positive and in a way similar. Feeling being part of "us" was an important factor.

"My co-workers are the reason, why I desire to work at Futurice." (Interviewee I)

"In case of a down or uphill, we notice that actually we are a team. We will survive the struggles. These people here together. And this is important for on-going motivation." (Interviewee A)

4.3.2 Performance Feedback

For nine interviewees, performance feedback was a motivating factor in their current work. Performance feedback and the meaning of it in this business domain is discussed in the previous section in detail. All the discussed findings and observation apply in this section and the results are completely similar.

The significance of performance feedback for interviewees was caused mainly by feeling that own work matters for somebody else. Receiving performance feedback makes someone else using their time to observe your work. It is a visible method to know that other's do notice one's work.

The main points discussed in the previous section could be summarised in three vital points. In this organization, the importance on feedback is caused by:

- 1) When you receive feedback in real time, you do not waste time and you are efficient
- 2) Due to nature of this business, it feels like not many people are seeing your work. If you do not receive feedback, it feels nobody knows about your work.
- 3) Receiving feedback makes your work feel meaningful for somebody else

In this study, there was a lot of variation regarding the stakeholder, who should give the feedback. The options presented were supervisor, colleagues, client and other employees.

There was not any consensus on, who should give feedback in order it to improve employees' work engagement. The preferred stakeholder varied case by case. Also, the stakeholder, who should give the feedback, was not mentioned in all interviews, in which this antecedent was chosen.

“When you receive feedback in real time, then you will not waste time. // Regarding meaningfulness of work.. It is important that other people get excited about my work. If somebody gets excited about your work, you will get a rush.” (Interviewee C)

4.3.3 Skill Variety

Skill variety was the antecedent, which was chosen the most often by interviewees. Twelve interviewees chose skill variety in their selection of the most important antecedents for work engagement. Therefore, skill variety is a particularly important antecedent of job resources for this working environment.

Skills variety means the degree of the variety of different activities, skills or talent needed in one's job. The skill variety is highly related to new challenges and development-category, which was presented in the previous section.

“I would not like to go to one of those large companies due to the narrow working field. Here you are able to utilize your skill's versatility. Elsewhere your substance knowledge could be improved a lot more and others desire to target superior substance knowledge. I prefer doing things more versatile because I am interested in more than one area of work. (Interviewee L)

“At Futurice, you are able to do versatile things inside one position. The content of your work is not limited by your title.” (Interviewee A)

4.3.4 Learning and Development Opportunities

Eleven interviewees stated that learning and development opportunities are the core of forming work engagement for them.

The learning and development opportunities are related to “new challenges and development”-category in previous research question. Addition to findings in that phase, there

is found also another perspective, why learning and development opportunities are increasing motivation and work engagement in this specific environment.

Based on interviewees' reasoning for choosing learning and development opportunities and their explanations for the meaning of it, two reasons can be observed:

- 1) Learning was a motivating factor for self in order to do something new
- 2) Also, the business is changing, fast-paced, therefore important to keep up the pace

The first statement is highly related to the findings in previous research question. The importance is caused by learning something new and gaining new skills and the attraction of new things.

The second statement, which is an addition to previous section's findings, is the importance of these opportunities in this business domain in general. This business domain is fast-paced and changing rapidly. Interviewees also acknowledging that issue inside this business. In order to keep up the change, the organization must enable to opportunities to constantly update one's expertise.

"If a workplace is not giving you tools to keep up with pace, it is not a good thing."
(Interviewee O)

4.3.5 Job Crafting

Ten interviewees chose job crafting as one of the factors, which are the most meaningful for them in motivating and engaging work. It should be noted that in the interviews, job crafting and job control were discussed several times together. Multiple times, interviewees did not make a difference between those two factors and though that job crafting is a part of job control.

In this thesis, job crafting and job control over methods and time are discussed as two separate factors. They are handled in the literature separately. Therefore, this thesis also makes a difference between these two antecedents.

Job crafting is defined as actions and motions to modify one's tasks, work environment or mind-set in order to enable working positions, which are more meaningful for oneself (Wrzesniewski & Dutton, 2001; Harju et al, 2016). The actions and motions originate from employee. The definition of job control will be handled in the next section.

At Futurice, people have a strong will to take control themselves and they do not want to be controlled. They desire to be active crafters of their work. Futurice's culture is enabling this and in fact, people are being encouraged to actively make a difference themselves regarding their work and working environment.

The cultural effect and the emphasis on desire to craft own work has to do with the freedom, responsibility and trust. These three factors were discussed in the first research question. All interviewees addressed the importance of these factors and the crucial nature of them for this organization.

"For me it is enough that I will be appointed a challenge. I want to be able to decide myself, how I am solving this challenge. I am not restricted with company's processes or practises." (Interviewee B)

"You have a lot of power to affect your work. Especially, what do you do here and how you do it." (Interviewee I)

4.3.6 Job Control (time and methods)

Ten interviewees chose job control over time and methods in the last phase of the interview. As said in the previous section, multiple interviewees combined job crafting and job control. The term "job control" was utilised to describe both antecedents.

Job control over methods and time is defined as decision making power over one's time schedule at work and methods utilised to perform. A work task can be conducted with methods an employee considers being the best and when an employee in one's wisdom thinks the job should be done.

Addition, the observation made regarding Futurice's culture and working environment in the job crafting section, a few interviewees brought up that own job controlling is becoming almost a norm in the software production industry. The need for job control is created inside Futurice, but also outside. In the software production industry, especially among "new school houses", job control is considered self-evident.

"Controlling your own job is important. In this business domain, possibility for job control starts to be almost a norm and people take it for granted. You are able to choose your tools and methods yourself. Sometimes, it depends on client and usually, you are able to choose yourself. Usually, customers rely on us. They trust our expertise." (Interviewee M)

“It is important for me. I am really bad in respecting authorities. I will get in conflict with them. At Futurice, we do not have them. Therefore, I cannot get into conflicts. I do not have a manager so nobody tells me what to do. I am being forced to do something, I won’t do it. Here, I will choose myself how to do things and when to do them.” (Interviewee K)

4.4 Measuring Work Engagement

The fourth question of this thesis aims to give insights in to work engagement measurement within a software production house:

iv. *How should the case company measure work engagement in this specific context?*

In this thesis, the aim is to provide insights in to what makes employees at a software house feel work engagement and to shine a light on how work engagement should be measured in this specific environment. Based on the interviews, observations on effecting factors for work engagement at Futurice can be identified as stated previously. However, measuring work engagement in this context is not as clear as were the findings on antecedents or on nature of the workplace.

Due to lack of general processes as well as un-hierarchy and un-bureaucratic nature of Futurice, factors and entities affecting an employee vary depending on a person. Two employees with similar competence profile might vary a lot regarding their perceptions of the working environment. The causes of this variation are the free and complicated un-official as well as official organization structures of Futurice’s working environment. Due to these organization structures at Futurice, it is challenging to form a general or one truth regarding the organization. At Futurice, affecting entities can be, for example, tribe, site, project, working premises, supervisors, mentors, clients, competence groups, seniority, other hobby or interest groups.

The findings on antecedents of job resources and on working environment can be used as a base for survey, but the differences in perceptions of defined factors should be taken into consideration. As stated before, the perceptions of different words varied among the sample. There was a lot of variation in how people understood the concepts and how the commonly used describing factors applied in the working environment.

In this study, the aim was to find clear relations and reasons for different perceptions and attitudes in choices as well as in topics discussed in the interviews. The research data was

analysed and handled in terms of the mentioned entities or stakeholders. The analysis consisted of examination on these entities' effect on differentiation and also examination on possible separations in perceptions in different entities. Data analysis attempted to find clear classification among the sample.

There was not found clear classifications of choices based on some official or unofficial group at Futurice. In individual factors, some explanations were found as stated before in the previous sections. But in general, this study could not provide valid classification, which realised in whole sample.

In order to find clear structures in choices of employees, the research method should have been more structured and statistical. Unstructured method provided plenty of information on employees' perceptions and unveiled intuitive opinions and feelings as seen in handlings parts of the first and the second research questions. In order to form any valid classifications or reason-cause-relations, more research focused on specially in few classifications would be required.

The six found antecedent of job resources can be utilised as a base for survey. The research findings regarding Futurice's working environment revealed, how the antecedents are realised in Futurice's working environment. Utilising the research findings, there is a possibility to form survey questions, which reflect this working environment.

But the work engagement measuring should not be on relying only on these findings. Even though it is possible to form a survey based on this study's findings, it should be taken into consideration that perception and opinions varied a lot as well as taking into account that the working environment is complex. Since there was not found any clear relations between different perceptions and entities at Futurice, measuring methods enabling individualised and personal answers should be chosen.

5 Discussion

In this upcoming section, I aim to reflect on the research findings with regards to existing theories presented in the literature review. The main findings of this study and current scientific literature will be compared to each other. The aim is to explain research findings by using previously introduced literature or to define the differences as well as the causes for said differences. This part of the thesis is interested in whether or not this study's findings support already existing literature, in conducting any new observations or examining whether a disagreement between the literature and the findings exists.

At the beginning of this study, I defined two research gaps within current work engagement research, the first gap being a lack of studies into antecedents, which drive work engagement within a software company's environment. The second gap is in the understanding that work engagement measurement requires more research in order to develop tools and methods for actual work engagement measurement within a software production house. In this study, I have aimed at gaining insights in to these two aspects, so that work engagement can be managed in the case digital service house, Futurice.

The basis of this study has been the Job Demand – Resources (JD-R) model by Bakker and Demerouti (Bakker & Demerouti, 2008). In the model job and personal resources drive work engagement, and work engagement leads to improvements in business performance (Bakker & Demerouti, 2008). In order to manage the outcomes of the model an organisation must be able to define the drivers of its work engagement as well as the techniques to measure them.

Since work engagement research is still a relatively young field of study, there is no agreed consensus on the factors, which drive work engagement (Hakanen, 2009). Some factors have been proven to affect work engagement, but the entity of all possible factors and their interconnections is still in parts incoherent. Especially industry specific antecedents are still lacking in detailed study. Several studies have been conducted in order to better define possible work engagement driving antecedents, see Table 1: Job Resources and Table 2: Personal Resources.

According to the findings of both Schaufeli and Hakanen (2012; 2009), job resources are often the most predictive factor of work engagement, especially when a job is highly demanding (Schaufeli, 2012). Schaufeli (2012) has also stated that within different organizations and jobs, the most meaningful factors or components of job resources differ.

Therefore, it is important to study the antecedents of job resources at both an industry as well as at a company level.

This study is also necessary to allow for the development of measurement tools in the context of this industry. As stated earlier, the one of the most successful and acknowledged measuring tools for work engagement is Gallup's 12-item Work Engagement Index (Q12) (Attridge, 2009; Harter, Schmidt & Keys, 2003; Harter & Schmidt, 2008). At the base of the Q12 index are the drivers of work engagement, which measure the levels of the employees' engagement in their work. In order to utilise similar approaches to measurement as the Q12, the study of the antecedents of job resources in this specific environment is required.

In this study, I utilised the JD-R model in a new industry and company specific context in order to reveal insights in to work engagement within a software production house. I aimed to reveal the antecedents of job resources that drive work engagement in a software production environment. With this study, the research on the antecedents of job resources, which drive work engagement is expanded and more industry specific knowledge is gained. In addition, this study increases the understanding of the relationships of different drivers of work engagement, and the working environment in which said drivers take effect. By utilising information provided in this study, Futurice can take a similar approach to work engagement measurement as Gallup has with the Q12. Futurice will be able to create a tool to reliably measure work engagement inside their working environment.

The discussion between this study's main findings and current research will be conducted in three different parts. The three parts are workplace, antecedents of job resources and measurement of work engagement. Even though these three components form an entity, of which this thesis is interested in, these components have been handled as separate parts in the literature review as well as in the findings of this thesis. Therefore, even though this thesis desires to understand the big picture of the topic in question, it is reasonable to handle these three components as separate discussion topics in terms of comparing the literature and the findings.

Next, I will go through each component, workplace, antecedents of job resources and measurement of work engagement, separately. The literature presented earlier and the research findings will be summarised in each section of the discussion. Each topic begins with a summary of the research findings presented in the previous section of this thesis.

5.1 Workplace

In this thesis, I observed 12 topics by analysing semi-structured theme interviews. Interviewees were asked to describe a software house as a working place in the theme interviews. The interviewees often brought up these 12 topics when they freely described their working environment without any influence from the interviewer.

The observed topics are freedom and responsibility, trust, the people at Futurice, informality, participation, transparency, learning, feedback, the organization's direction, importance of a tribe, sense of communality and social support. It should be noted, that even though these 12 factors of Futurice's working place were easy to determinate based on the interviews, there were differences in the perceptions of these topics as well as in how the topic's current state affected work engagement. The data was coherent based on the topics discussed, but not uniform based on the interviewees' attitudes and experiences.

In chapter 1.2 Software production, this thesis introduced the basic elements of a software production organization and the unique characteristics regarding work at a software development company. The aim was to highlight the differences and specialties in work at software production houses. In this chapter, I introduced the main literature in regards to work at a software production house. The introduced key elements were a multidisciplinary approach, cooperation, importance of people, collaborative leadership, trust, collective responsibility, individual development, uncontrolled environment, user and management support, project orientation, social dimensions and high responsibility.

In terms of defined factors in the literature that describe work at a software house, Futurice is clearly an example of a typical software company. The features defined in literature apply to the Futurice organization. The experiences of interviewees go in line with the characteristics given by the literature for a software house and for the type of work conducted in such a company. In accordance with the first research question, Futurice can be defined as a software production house when described by its employees and current literature.

It should be taken into consideration, that the literature presented does not include the cultural aspects or organizational specialties of an organization. This thesis' focus has been on the intuitive perceptions and impressions individuals. The 12 topics described in Futurice's working environment are in accordance with current scientific literature, but an emotional aspect was also present when the working environment is described. The results of this thesis also include the emotional aspects and opinions of interviewees.

When combining the features defined in the literature (the same ones that are observed at Futurice), and Futurice’s culture, presented in the chapter 1.3 Case company, it is observable that this combination can be used to explain the results to research questions two, three and four. These two components form an entity, which to some extent explains the results and experiences of interviewees. The provided reasoning and explanations in the findings section concerning research questions two, three and four are in accordance with the combination of the presented literature and Futurice’s culture.

As stated before in this thesis, each topic regarding the working environment consisted of two or more possible perceptions or points of view. The data was not coherent regarding the perceptions of topics. In the previous section, the differences have been presented in detail. This thesis was unable to define clear structures for differences in perception. In order to form valid causal connections, more statistical research should be conducted utilising a more structured method. In this study, I concentrated on forming an overview with semi-structured methods.

Four out of 12 factors were perceived as positive aspects for motivation and work engagement at Futurice. These four topics are freedom and responsibility, trust, the people at Futurice and informality. All the perceptions regarding these four topics were positive. It can be observed that all of these factors are ones that enable more control over one’s job and more self-expression for employees at work. All the factors perceived as positive make it possible for employees to act based on their judgement and to be more of themselves in the working environment. It seems that factors dealing with the expression of one’s own self socially, or while executing work projects, are ones that increase the motivation in this environment.

The neutral and negative factors observed suggest that there is a connection with personal differences and the subjective perceptions of these topics. There were multiple differences in how interviewees perceived these factors, and how they defined them in both neutral and negative topics. Personal differences might be the main reason for variations in the topics considered as neutral or negative.

In the interviews, three topics on average were perceived as neutral for work engagement and satisfaction. These factors were learning, a sense of communality and social support. Based on the interviews, it seems that uncertainty could be one of the key explanations for the factors perceived as neutral. Futurice’s working environment’s unstructured and almost a chaotic nature may cause a feeling of uncertainty. Some interviewees did not stress about the future or

the group they belong to, but some felt insecurity regarding their position inside the working environment. The combinations of the working environment's nature and of personal differences may cause the worry concerned with learning the new skills or concerns with one's own place in the social environment. The nature of an unstructured working environment within an organization enables the feeling of uncertainty for persons who requires strong support structures.

Five topics were perceived as mainly negative issues for the working environment in this specific case. Participation, transparency, feedback, importance of a tribe and the organization's direction were perceived to decrease work engagement and motivation. It should be noted that on average these factors were negative. All of the interviewees did not consider them as a negative issue for their motivation. In addition, these factors are complex. Even though this thesis considered them as negative factors, the findings may differ if some other research approach is chosen for use. Therefore, this discussion should be used only to broaden management's perspectives on their working environment – not as an unequivocal truth.

It is interesting to note that Futurice's core cultural factors are considered as negative issues for the motivation of the interviewees. These five factors have been at the core of the company's culture for a long time. The company has changed over the years, but the research results suggest that the execution of cultural aspects might be in need of change. Perhaps cultural practises should reflect the current state of the company more.

Furthermore, employees might have seen change in these cultural aspects over the years. They may compare the current state of being to some state in the past. It is difficult to analyse if the overall change has been a positive or a negative one. In general, it takes time for people to adjust to change. Perhaps, change is visible more clearly in these factors and therefore, they are seen as negative. One might also note that, these aspects are easier to analyse and notice by employees, because they are often discussed and brought up by Futurice in the media. Factors stated in public are more noticeable and thereby easier for employees to judge.

5.2 Antecedents of Job Resources

In the upcoming section, I will discuss the most important antecedents of job resources at a software house. In the last part of the theme interviews, interviewees chose an unrestricted amount of antecedents from all possible antecedents of job resources made available.

Interviewees chose freely the most important antecedents for themselves in this specific working environment. They chose antecedents, which are the most vital for themselves for motivating and engaging in work.

The factors, which interviewees chose the most often, are a team level sense of communality and engagement, performance feedback, skill variety, learning and development opportunities, job crafting and job control. The table below assembles the choices of all 16 interviewees. All of the chosen antecedents are explained in the findings section of this thesis.

Table 8: Analysis on Job Resources

JOB RESOURCES	INTERVIEWEE																SUM
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Social Support from colleagues and supervisors	x			x	x					x					x		5
Team Level Sense of Communality and Engagement	x		x	x	x	x	x	x	x	x	x		x				11
Performance Feedback	x	x	x	x		x				x				x	x	x	9
Skill Variety	x	x	x		x	x	x	x	x			x	x		x	x	12
Autonomy		x				x		x						x	x		5
Learning or Development Opportunities		x		x	x		x	x	x	x		x	x		x	x	11
Supervisory Coaching										x						x	2
Job Control (time and methods)	x			x	x		x	x			x	x	x	x	x		10
Social Climate						x	x							x		x	4
Information				x												x	2
Value Fit					x			x			x	x					4
Rewards and Recognition		x	x							x		x			x	x	6
Perceived Contract Fulfilment		x						x									2
Job Crafting	x	x	x	x	x	x	x		x		x			x			10
Transformational Leadership					x						x						2
SUM	6	7	5	7	8	6	6	7	4	6	5	5	4	5	7	7	

According to Schaufeli (2012), the most important job resources are social support from colleagues and supervisors, performance feedback, skill variety, autonomy and learning and development opportunities. These five factors of job resources have been proven on a general level to be generally the most vital ones. However, Schaufeli (2012) has also stated that in

different organizations and jobs, the most meaningful factors or components of job resources differ.

Based on this research, this organization and this field of business, the three most vital factors for work engagement are the same as in Schaufeli's (2012) set of job resources. As in Schaufeli's (2012) set, performance feedback, skill variety and learning and development opportunities are also essential for Futurice's employees. In this study, the two factors dealing with control and decision-making power over one's own work have been especially emphasised in comparison to the five previously mentioned factors in job resources that generally drive work engagement. In addition to this, the factors dealing with self-development, skill variety and learning and development opportunities, are both in the selection of the most important antecedents and in this field specific examination.

The emphasis on job control, job crafting and self-development can be explained with the findings in the first research question. In addition, the choice of a team level sense of communality and engagement over support from colleagues and supervisors is a rational one, when considering findings regarding Futurice's working environment as well as the motivating aspects in it. Futurice's culture as well as the working environment are causing an emphasis on a need for the possibility to control one's own work and future.

As stated in the findings section, controlling your own job is becoming almost a norm in the software production industry. In the interviews, multiple interviewees stated that job crafting and job controlling are considered self-evident in this environment. A possibility to control your own career as well as your work is in the base of Futurice's organization culture. Additionally, in this working environment the emphasis may be caused by the personalities of the employees. The recruiting process might put an emphasis on self-imposed characteristics, since Futurice recruits active persons.

When considering work inside of this business domain, self-development is essential. It is no wonder that both, skill variety and learning and development opportunities, are in the selection of the most important job resources. This business domain is highly dynamic and fast-paced. In order to keep up with the change, employees must continuously develop themselves further. Feedback is also crucial for development. In a sense, received feedback makes development more visible for the employee in question.

The choice of a team level social factor can also be explained with the nature of work at Futurice. Work at Futurice, and in the software production industry in general, is based on

independent project teams. Success of a work project is highly dependent on the success of a project team. Since there is no specific ready-made item to be sold, the team's results are more than vital for success. Teamwork defines the outcome of a project. A project team creates the result of a project every single time.

Employees spend a substantial amount of time closely within a project team, which highlights the importance of a project team for the social aspects of work. In this sort of consulting based work, a project team may work at the customer's premises. Therefore, a project team is highly important due to an unfamiliar environment and changing conditions.

In this study, I have been interested in the drivers of work engagement in this environment. Since there was no previous research on the antecedents of job resources in a software production domain, this study provided insights for future studies. In this thesis, I have been able to offer a rationalized entity of the job resources driving work engagement in this business domain.

Also, due to work engagement's and its drivers' dependency on a situation, there were no valid previous studies, that could be compared to this study. In the literature, it has been stated that the most important job resources for work engagement's creation vary depending on the situations (Schaufeli, 2012). In this thesis, I aimed to study job resources in this one context and found insights in this specific business domain.

5.3 Measurement of Work Engagement in a Software House

The third component of the discussion section in this thesis concentrates on measuring work engagement in a software house. In this thesis, I have aimed to gain insights on how work engagement should be measured at Futurice. In this thesis, I have succeeded in providing insights, but the results have not been solid or uniform as discussed in the findings.

The findings from the third research question can be utilised as a base for measuring work engagement with a survey at Futurice. The six defined antecedents of job resources form a basis of work engagement creation in Futurice's working environment. Additionally, the first research question revealed characteristics of Futurice's working environment and how employees experience them. When utilizing the insights found in the first research question, a survey can be formed. The analysis of the first research question provides insights on, how the survey questions should be addressed.

It is to be noted, that this study consisted of varying perceptions and opinions of interviewees, which could not be explained with clear classifications or with informal or formal group memberships. Causal connections were out of the reach of this study. The complex organizational as well as social structures of Futurice create challenges for forming coherent causal connections. Therefore, the problem of measuring work engagement in this working environment is not an easy task to solve.

Measuring work engagement is still a young field of study, and there is still no coherent consensus on its measurement. Academic research in the field of measuring work engagement did not really begin until the 21st century (Hakanen, 2009). Based on the literature review conducted, work engagement is mainly measured by utilizing data received from surveys. Currently, there is a lack of measuring methods enabling week-level or monthly-level measuring.

In chapter 2.3 Measuring Work Engagement, I presented two tools that have gained recognition and that are used as references in the academic as well as the business world. These measurement tools are the Utrecht Work Engagement Scale (UWES) and the 12-item Worker Engagement Index (Q12). Both of these tools are survey based. The UWES has 17 or nine questions in the survey and Q12 has 12 questions.

Even though, according to the literature, surveys are the main tool used in work engagement measurement, the content of the surveys vary. For example, Q12 approaches work engagement through the most important job resources and personal resources. The UWES' survey on the other hand, defines the situation of vigor, dedication and absorption. The approaches to measurement are different even though both tools measure the current situation of work engagement.

For Futurice, it may be recommendable to choose a similar approach that Q12 has chosen. Q12 has chosen to approach work engagement measurement by utilising information gained from the research of work engagement's drivers. In this thesis, I have provided information regarding work the engagement drivers as well as the organizational aspects of Futurice. For an organization operating in the software development business domain and not in the academic world, an approach focusing on the drivers or antecedents of job resources is justified due to the managerial perspectives of the antecedents. The UWES is mainly utilised in the academic research.

Based on the findings of this research thesis, work engagement in this specific environment should not however be measured by utilising only surveys. Measuring methods that enable individualised and personal answers should be chosen. In this case, forming a reliable measuring tool or a collection of tools requires more research.

6 Conclusion

In this thesis, I conducted a study of a software company's working environment, its employees' motivations, the drivers of the working environment and the measurement of work engagement in this specific context. The four defined research questions were:

- i. *How do employees perceive a software company as a working environment?*
- ii. *In what circumstances do employees feel work engagement in a software company?*
- iii. *Which job resources' antecedents drive work engagement the best in a software company?*
- iv. *How should the case company measure work engagement in this specific context?*

In this thesis, I was interested in examining employees' perceptions of their working environment. I examined commonly occurring topics in the theme interviews. The observed topics were freedom and responsibility, trust, the people at Futurice, informality, participation, transparency, learning, feedback, the organization's direction, importance of a tribe, a sense of communality and social support.

An important finding for the management of the case company is that each topic included two or more possible perceptions. Even though employees covered the same topics, the meanings or the perceptions were different. In this thesis, I provided insights of these differences among the working environment. The differences are presented in detail in the findings section.

In addition to understanding this specific working environment, I was able to provide insights in to the drivers of work engagement in this context. Firstly, I observed that employees of the case company felt work engagement in four different types of experiences. All of the described experiences fell into four categories. These categories were feedback, collaboration and teamwork, final results and new challenges and developing something new.

Secondly, I defined the six antecedents of job resources, which are the biggest drivers of work engagement in this context. These antecedents are a team level sense of communality and engagement, performance feedback, skill variety, learning and development opportunities, job crafting and job control. In this study, I explained the selected antecedents with the key elements in Futurice's working environment. I was able to find a clear relation between the working environment and the defined drivers.

In terms of measuring work engagement in a software company, this study can be utilised when forming a survey. The understanding of the working environment in combination with insights on antecedents of job resources enables survey creation. However, in the discussion part of this thesis it is brought up that surveys might not be the best possible option. Due to differentiations in perceptions and choices, the work engagement in this specific environment should not be measured by utilising only surveys. Measuring methods, which enable more individualised and personal answers, should be chosen.

From a managerial perspective, I succeeded in my purpose of providing more insights on work engagement as a phenomenon in a software company. As is addressed in the discussion part, I was able to provide insights on all of the four research questions. However, in terms of theoretical influence, in this study I provided understandings for future studies, but I could not provide theoretically solid and valid causal connections.

In the next section of this thesis, I discuss managerial and theoretical implications and possible limitations and suggestions for future research.

6.1 Managerial Implications

In this study, I provided an overview of a software house's working environment and insights into work engagement within such a software house. Especially for the case company, I provided plenty of information of the current situation within the organization. The management of the case company can utilize this study in the development of the entire organization as well as in improving the work engagement of an individual employee. The provided observations can be utilised for future purposes in work engagement and employee well-being management.

For management, in this study there was provided more profound insights as compared to employee satisfaction surveys. The aim was to understand the differences in perceptions and to increase understanding instead of measuring the current state of specific elements. In addition, in this study I revealed topics that the employees brought up themselves. Usually, satisfaction survey methods are constructed. They do not enable the observation of employees' differences in their current states of mind due to ready-defined questions. In this study, the content was defined by employees instead of management or HR.

6.2 Theoretical Implications

From a theoretical perspective, I have been aimed to give insights in to two research gaps. These research gaps are a lack of research in the field of drivers of work engagement in a software company as well as in the field of work engagement measurement. In this study, I utilised work engagement theories in a new context. In the literature review, the presented theories and research results were studied in a new environment. This was done purposefully to observe work engagement in this specific environment from the two before mentioned aspects.

In this study, I provided insights on the antecedents of job resources in a software company. The unique working environment of a software house was taken into account when examining the drivers. In the discussion part, the most important antecedents were compared with the already existing general research results. The findings of this study and previous studies seemed to be parallel. There are similarities in defining the most important antecedents for work engagement in this context and in general.

Of course, the unique working environment of a software house caused some differentiation. In this study, the two factors dealing with control and having decision-making power over one's own work have been emphasised. These two factors were job crafting and job control. In addition, a need for personal development was also emphasised.

Based on this research's findings, work engagement measurement requires plenty more research in to the working environment as well as the drivers of work engagement. In this thesis, I proposed that work engagement in this environment should not be measured by utilising only surveys. I observed that there are multiple variations, that should be taken into account.

In this thesis, I was unable to define clear structures for the differences in perceptions or choices. In order to form valid causal connections, more research should be conducted utilising more structured methods. I concentrated on forming an overview with semi-structured methods instead of causal relations. Therefore, the theoretical implication is the increase in general understanding instead of observations in solid causal relations.

6.3 Limitations and Suggestions for Further Research

This study is a qualitative case study, which was conducted in one company, Futurice. In this study, I only took into account the characteristics and employees of the selected case company. Therefore, the research results cannot be generalised with the rest of the companies within this business domain.

The sample size of this study was relatively small. Even though 17 interviews enable insights in to the research topics, more employees should participate in the research in order to verify the results in the case company. This thesis created a base for future research, and more research is required to verify the results.

In addition, as has been stated before, the drivers of work engagement are unique in different situations and within differing organizations (Schaufeli, 2012). The generalization of the results would require parallel studies in other companies within this business domain. Generalization would also require research conducted by utilising quantitative methods.

In this research, I could not provide valid classifications among the sample data. Quantitative methods could provide a possibility to observe these classifications. Links and connections between perceptions and informal or formal groups is a possible research topic of the future.

A possibility of variation in interview data is a limitation within this thesis. The selected research method revealed the current state of mind and opinions of the interviewees. In the interviews, interviewees covered the topics, which they brought up themselves. The interviewer did not have an influence on the content of an interview. The content of an interview may have varied depending on the day or situation. If an interview was renewed with the same interviewee on another day, the covered topics may be different. The chosen interview method allows for the effects of outside influences.

It should also be noted that in this study, two different languages were utilised. Fourteen of the interviews were conducted in Finnish and three in English. The transcripts were conducted in the language of the interview, but the analysis and quotes are in English. There is always a possibility that some errors in interpretation may have happened.

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Appendix A: Interview Structure

1. BACKGROUND INFORMATION
 - a. General information: age, how long has a person worked at Futurice, etc.
 - b. What do you do in an ordinary working day?
2. THEME: Software house as a work place & working environment
3. THEME: A good place to work in a software production business field
 - a. Possible pros & cons
4. THEME: Motivation and meaningfulness at work
 - a. When have you experienced motivation, meaningfulness and excitement at your work?
 - b. Give examples.
5. THEME: Job Resources at Futurice
 - a. Choose couple of these factors (for example 2-5)
 - b. What did you choose these?
 - c. What do you think they mean?
 - d. Does these apply at Futurice? Why or why not?
 - e. Considering your situation at the moment: How would you prioritise these in an ideal working environment?
6. CONCLUSION
 - a. Is there something you would like to say? Anything else?
 - b. Thank you!